

EXHIBIT L-11

Ex. L-11
CMO US PATENT NO. 6,664,569

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EXHIBIT L-11
U.S. PATENT NO. 6,664,569
TERMS IN DISPUTE

ASSERTED CLAIM 21

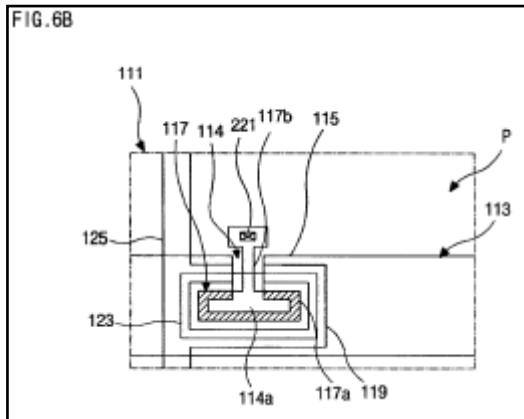
21. The LCD device of claim 17, wherein the source electrode **substantially surrounds the drain electrode.**

LGD's Claim Construction

substantially – considerably

substantially surrounds the drain electrode – extending considerably around a portion of the drain electrode

INTRINSIC EVIDENCE FOR DISPUTED TERMS
“SUBSTANTIALLY” AND “SUBSTANTIALLY SURROUNDS
THE DRAIN ELECTRODE”:



electrode corresponding to the open portion of the gate electrode, and a source electrode extended from the data line and formed in the same plane as the drain electrode, **the source electrode surrounding the drain electrode** and the open portion of the gate electrode along the steps of the semiconductor layer.

4:34-39

ing 114 of the gate electrode 115. Moreover, the drain electrode 117 is divided into a first electrode portion 117a and a second electrode portion 117b. And thus, **the source electrode 119 also surrounds the first electrode portion 117a of the drain electrode 117**. As shown in FIG. 5, at the end of the second electrode portion 117b of the drain electrode 117, a drain contact hole 221 is formed, thus a pixel electrode 225 is electrically connected with the drain electrode 117 through this drain contact hole 221.

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INTRINSIC EVIDENCE FOR DISPUTED TERMS
“SUBSTANTIALLY” AND “SUBSTANTIALLY SURROUNDS
THE DRAIN ELECTRODE” (cont’d):

opening portion **114b** of FIG. 6A. Moreover, the drain electrode **117** is spaced apart from the source electrode **119**, and the first electrode portion **117a** of the drain electrode **117** is surrounded by the source electrode **119** along the steps of the semiconductor layer **123**.

7:19-23

EXHIBIT 11
U.S. PATENT NO. 6,664,569
TERMS IN DISPUTE

ASSERTED CLAIM 25

25. A liquid crystal display (LCD) device, comprising:
 a substrate;
 a gate line on the substrate and extending along a first direction, the gate line including a gate electrode, the gate electrode having an opening therein, wherein the opening includes a first opening portion and a second opening portion;



a first insulating layer on the gate line;
 a semiconductor layer on the first insulating layer;
 a data line on the insulating layer and extending along a second direction;
 a drain electrode having a first electrode and a second electrode, the first electrode of the drain electrode overlapping at least a part of the first opening portion of the gate electrode; and
 a source electrode on the semiconductor layer, extending from the data line and being separated and spaced apart from the drain electrode.

LGD's Claim Construction

gate electrode² – patterned electrically conductive material that includes a portion that controls current flow through the channel between the source electrode and drain electrode

the opening includes a first opening portion and a second opening portion – the space in the gate electrode pattern includes a first part to primarily compensate for gate-drain layer misalignment and a second part to primarily reduce gate-drain capacitance

a first opening portion – a first part to primarily compensate for gate-drain layer misalignment

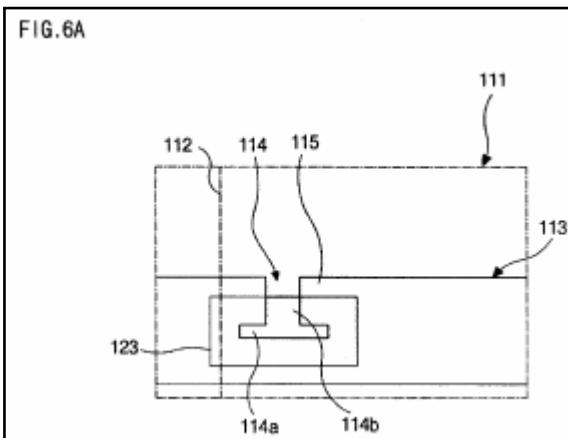
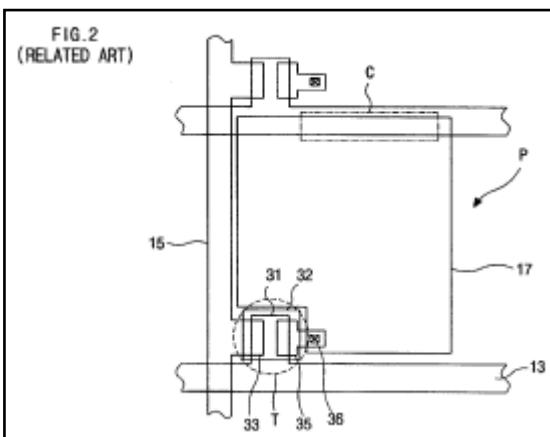
a second opening portion – a second part to primarily reduce gate-drain capacitance

² Disputed Term “gate electrode” also appears in asserted claim 31 in the same context.

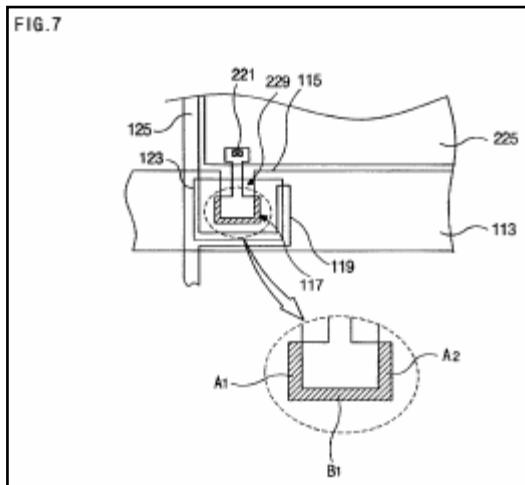
INTRINSIC EVIDENCE FOR DISPUTED TERM “GATE ELECTRODE”:

An array substrate for use in a liquid crystal display device includes a thin film transistor as a switching element, having a gate electrode, a source electrode and a drain electrode, wherein the gate electrode is a portion of a gate line near the crossing of the gate and data lines, and has an inverted “T”-shaped opening or a rectangularly-shaped opening. The drain electrode is shaped like the inverted “T”-shape and corresponds to the opening of the gate electrode. The source

Abstract



INTRINSIC EVIDENCE FOR DISPUTED TERM “GATE ELECTRODE” (cont’d):



another related art. As shown, in contrast to the above-mentioned array substrate, a gate electrode 41 is formed in the gate line 47. Namely, a portion of the gate line 47, near the crossing of the gate and data lines 47 and 43, is used as the gate electrode 41. In order to form the TFT, a drain electrode 45 is formed over the gate line 47. Thus, the gate-drain parasitic capacitance C_{gd} is determined by an area of the drain electrode 45.

3:33-40

As described hereinbefore, according to the principles of the present invention, a portion of the gate line is used as the gate electrode. And a portion of the gate electrode is patterned so as to form a certain-shaped opening. Accordingly, there is a reduced overlap area between the

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INTRINSIC EVIDENCE FOR DISPUTED TERMS “THE OPENING INCLUDES A FIRST OPENING PORTION AND A SECOND OPENING PORTION”, “A FIRST OPENING PORTION” AND “A SECOND OPENING PORTION”:

FIG.6B

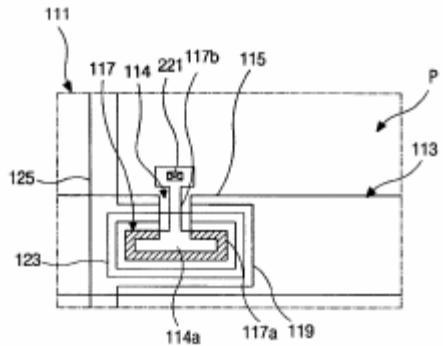
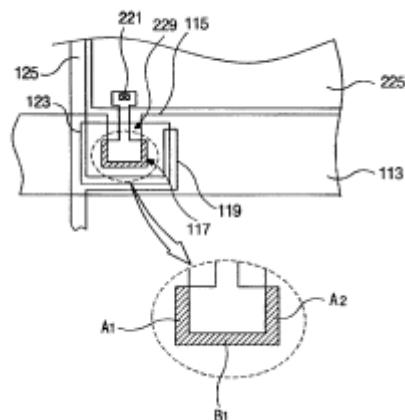


FIG.7



INTRINSIC EVIDENCE FOR DISPUTED TERMS “THE OPENING INCLUDES A FIRST OPENING PORTION AND A SECOND OPENING PORTION”, “A FIRST OPENING PORTION” AND “A SECOND OPENING PORTION” (cont’d):

Still referring to FIG. 5, in order to decrease an overlapped area between the gate electrode 115 and the drain

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electrode 117, the portion of the gate electrode 115 under the drain electrode 117 is etched such that the inverted “T”-shaped opening 114 is formed. In other words, the portion of the gate electrode 115 corresponding to the first electrode portion 117a of the drain electrode 117 is etched in a smaller area than the first electrode portion 117a. Thus, edges of the first electrode portion 117a of the drain electrode 117 overlap the gate electrode 115. Moreover, a portion of the gate electrode 115 under the second electrode portion 117b is etched in a wider area than the second electrode portion 117b of the drain electrode 117. Thus, the gate electrode 115 is not overlapped by this second electrode portion 117b.

Accordingly, as described above, since the edges of the first electrode portion 117a of the drain electrode 117 only overlap the gate electrode 115, the gate-drain parasitic capacitance that depends on the overlapped area is minimized.

6:1-17

Still referring to FIGS. 6B and 9, the drain electrode 117 is patterned into an inverted “T”-shape and corresponds to the inverted “T”-shaped opening 114 of the gate electrode 115. Again, the drain electrode 117 is divided into the first electrode portion 117a and the second electrode portion 117b. The first electrode portion 117a overlaps the gate electrode 115 such that the edges of the first electrode portion 117a form a “U”-shaped overlapped area (depicted by oblique lines) with the gate electrode 115. The second electrode portion 117b is vertically extended from the first electrode portion 117a over the pixel area “P,” and does not overlap the gate electrode 115 due to the fact that the second electrode portion 117b is narrower than the second opening portion 114b of FIG. 6A. Moreover, the drain electrode 117 is spaced apart from the source electrode 119, and the first electrode portion 117a of the drain electrode 117 is surrounded by the source electrode 119 along the steps of the semiconductor layer 123.

7:6-23

INTRINSIC EVIDENCE FOR DISPUTED TERMS “THE OPENING INCLUDES A FIRST OPENING PORTION AND A SECOND OPENING PORTION”, “A FIRST OPENING PORTION” AND “A SECOND OPENING PORTION” (cont’d):

As described hereinbefore, since only the edges of the first electrode portion of the drain electrode overlaps the gate electrode, the gate-drain parasitic capacitance C_{gd} is reduced and minimized due to the smaller overlapped area. Moreover, referring to the enlarged view of the first electrode portion of the drain electrode as shown in FIG. 6C, the compensation for any misalignment will be explained.

7:41-47

direction. If the left portion “ A_1 ” of the overlapped area is decreased due to horizontal misalignment, the right portion “ A_2 ” is increased. In this manner, if the bottom portion “ B_1 ” of the overlapped area is decreased due to vertical misalignment, the top portion “ B_2 ” is increased. Thus, the overlapped area between the drain electrode 117 and the gate electrode 115 is maintained uniformly even though misalignment occurs. Therefore, the variation of the gate-drain parasitic capacitance is reduced and minimized.

7:51-59

123, as in the first embodiment. Moreover, edges of the drain electrode 117 overlap the gate electrode 115, and thus the overlapped area is formed generally with a “U”-shape (depicted by oblique lines). As a result, the gate-drain parasitic capacitance C_{gd} is reduced and minimized as in the first embodiment.

Moreover, referring to the enlarged view of the drain electrode 117 of FIG. 7, any misalignment occurring in the step of forming the drain electrode 117 is compensated. When forming the drain electrode 117 over the rectangle-shaped opening 229 of the gate electrode 115, the drain

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INTRINSIC EVIDENCE FOR DISPUTED TERMS “THE OPENING INCLUDES A FIRST OPENING PORTION AND A SECOND OPENING PORTION”, “A FIRST OPENING PORTION” AND “A SECOND OPENING PORTION” (cont’d):

Moreover, referring to the enlarged view of the drain electrode 117 of FIG. 7, any misalignment occurring in the step of forming the drain electrode 117 is compensated. When forming the drain electrode 117 over the rectangle-shaped opening 229 of the gate electrode 115, the drain electrode 117 can be misaligned in a horizontal or vertical direction. If the left portion “A₁” of the overlapped area is decreased due to horizontal misalignment, the right portion “A₂” is increased. In this manner, if the bottom portion “B₁” of the overlapped area is decreased due to vertical misalignment, the left and right portions “A₁” and “A₂” are increased. Thus, the overlapped area between the drain electrode 117 and the gate electrode 115 is maintained uniformly even though the misalignment occurs. Therefore, the variation of the gate-drain parasitic capacitance is lowered and minimized.

8:13-28

EXHIBIT 11
U.S. PATENT NO. 6,664,569
TERMS IN DISPUTE

ASSERTED CLAIM 17

17. A liquid crystal display (LCD) device, comprising:
 a substrate;
 a gate line on the substrate and extending along a first direction, **the gate line having an opening therein**;
 a first insulating layer on the gate line;
 a semiconductor layer on the first insulating layer over at least a portion of the opening;
 a data line on the insulating layer and extending along a second direction substantially perpendicular to the first direction;
 a drain electrode on the semiconductor layer over at least a portion of the opening; and
 a source electrode on the semiconductor layer, extending from the data line and being separated and spaced apart from the drain electrode.

ASSERTED CLAIM 25

25. A liquid crystal display (LCD) device, comprising:
 a substrate;
 a gate line on the substrate and extending along a first direction, the gate line including a gate electrode, **the gate electrode having an opening therein**, wherein the opening includes a first opening portion and a second opening portion;
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 a first insulating layer on the gate line;
 a semiconductor layer on the first insulating layer;
 a data line on the insulating layer and extending along a second direction;
 a drain electrode having a first electrode and a second electrode, the first electrode of the drain electrode overlapping at least a part of the first opening portion of the gate electrode; and
 a source electrode on the semiconductor layer, extending from the data line and being separated and spaced apart from the drain electrode.

LGD's Claim Construction

the gate line having an opening therein – the gate line has a space in its pattern to reduce gate-drain capacitance and compensate for gate-drain layer misalignment

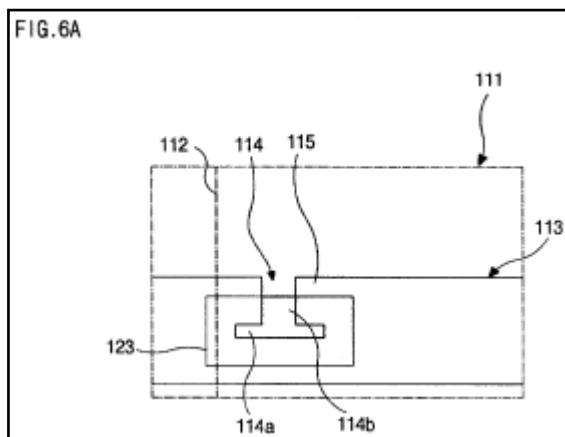
having an opening therein – has a space in its pattern to reduce gate-drain capacitance and compensate for gate-drain layer misalignment

the gate electrode having an opening therein – the gate electrode has a space in its pattern to reduce gate-drain capacitance and compensate for gate-drain layer misalignment

INTRINSIC EVIDENCE FOR DISPUTED TERMS “THE GATE LINE HAVING AN OPENING THEREIN,” “HAVING AN OPENING THEREIN” AND “THE GATE ELECTRODE HAVING AN OPENING THEREIN”:

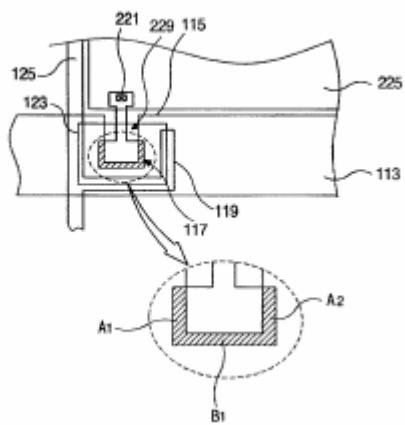
An array substrate for use in a liquid crystal display device includes a thin film transistor as a switching element, having a gate electrode, a source electrode and a drain electrode, wherein the gate electrode is a portion of a gate line near the crossing of the gate and data lines, and has an inverted “T”-shaped opening or a rectangularly-shaped opening. The drain electrode is shaped like the inverted “T”-shape and corresponds to the opening of the gate electrode. The source electrode surrounds the drain electrode along the steps of the semiconductor layer. Accordingly, in the thin film transistor having this structure, the gate electrode is only overlapped by the edges of the drain electrode. And thus, the gate-drain parasitic capacitance is reduced and minimized. Also, variations in the gate-drain parasitic capacitance are prevented. As a result, a high resolution is achieved and the picture quality is improved in the liquid crystal display device.

Abstract



INTRINSIC EVIDENCE FOR DISPUTED TERMS “THE GATE LINE HAVING AN OPENING THEREIN,” “HAVING AN OPENING THEREIN” AND “THE GATE ELECTRODE HAVING AN OPENING THEREIN” (cont’d):

FIG.7



To overcome the problems described above, the present invention provides an array substrate that has a novel structure for decreasing the gate-drain parasitic capacitance.

Another object of the invention is to provide an array substrate that decreases an overlapped area between gate and drain electrodes.

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To achieve these and other objects and in accordance with the purpose of the present invention, as embodied and broadly described, an array substrate for use in a liquid crystal display device having a lower gate-drain parasitic capacitance includes a gate line arranged in a horizontal direction on a substrate; a data line arranged in a vertical direction perpendicular to the gate line over the substrate;

4:19-25

Edges of the first electrode portion of the drain electrode overlap the gate electrode. Namely, two or three side edges of the first electrode portion overlap the gate electrode.

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INTRINSIC EVIDENCE FOR DISPUTED TERMS “THE GATE LINE HAVING AN OPENING THEREIN,” “HAVING AN OPENING THEREIN” AND “THE GATE ELECTRODE HAVING AN OPENING THEREIN” (cont’d):

Still referring to FIG. 5, in order to decrease an overlapped area between the gate electrode 115 and the drain

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electrode 117, the portion of the gate electrode 115 under the drain electrode 117 is etched such that the inverted “T”-shaped opening 114 is formed. In other words, the portion of the gate electrode 115 corresponding to the first electrode portion 117a of the drain electrode 117 is etched in a smaller area than the first electrode portion 117a. Thus, edges of the first electrode portion 117a of the drain electrode 117 overlap the gate electrode 115. Moreover, a portion of the gate electrode 115 under the second electrode portion 117b is etched in a wider area than the second electrode portion 117b of the drain electrode 117. Thus, the gate electrode 115 is not overlapped by this second electrode portion 117b.

Accordingly, as described above, since the edges of the first electrode portion 117a of the drain electrode 117 only overlap the gate electrode 115, the gate-drain parasitic capacitance that depends on the overlapped area is minimized.

6:1-17

As described hereinbefore, since only the edges of the first electrode portion of the drain electrode overlaps the gate electrode, the gate-drain parasitic capacitance C_{gd} is reduced and minimized due to the smaller overlapped area. Moreover, referring to the enlarged view of the first electrode portion of the drain electrode as shown in FIG. 6C, the compensation for any misalignment will be explained.

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INTRINSIC EVIDENCE FOR DISPUTED TERMS “THE GATE LINE HAVING AN OPENING THEREIN,” “HAVING AN OPENING THEREIN” AND “THE GATE ELECTRODE HAVING AN OPENING THEREIN” (cont’d):

decreased due to horizontal misalignment, the right portion “A₂” is increased. In this manner, if the bottom portion “B₁” of the overlapped area is decreased due to vertical misalignment, the top portion “B₂” is increased. Thus, the overlapped area between the drain electrode 117 and the gate electrode 115 is maintained uniformly even though misalignment occurs. Therefore, the variation of the gate-drain parasitic capacitance is reduced and minimized.

7:52-59

123, as in the first embodiment. Moreover, edges of the drain electrode 117 overlap the gate electrode 115, and thus the overlapped area is formed generally with a “U”-shape (depicted by oblique lines). As a result, the gate-drain parasitic capacitance C_{gd} is reduced and minimized as in the first embodiment.

Moreover, referring to the enlarged view of the drain electrode 117 of FIG. 7, any misalignment occurring in the step of forming the drain electrode 117 is compensated. When forming the drain electrode 117 over the rectangle-shaped opening 229 of the gate electrode 115, the drain electrode 117 can be misaligned in a horizontal or vertical direction. If the left portion “A₁” of the overlapped area is decreased due to horizontal misalignment, the right portion “A₂” is increased. In this manner, if the bottom portion “B₁” of the overlapped area is decreased due to vertical misalignment, the left and right portions “A₁” and “A₂” are increased. Thus, the overlapped area between the drain electrode 117 and the gate electrode 115 is maintained uniformly even though the misalignment occurs. Therefore, the variation of the gate-drain parasitic capacitance is lowered and minimized.

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INTRINSIC EVIDENCE FOR DISPUTED TERMS “THE GATE LINE HAVING AN OPENING THEREIN,” “HAVING AN OPENING THEREIN” AND “THE GATE ELECTRODE HAVING AN OPENING THEREIN” (cont’d):

vertical direction perpendicular to the gate line 113. The source electrode 119 is extended from the data line 125 and has a “U”-shape. A rectangle-shaped opening is formed in a portion for the gate electrode 115 in the gate line 113. Also, the drain electrode 117 is formed over the rectangle-shaped opening of the gate electrode 115. Although the drain electrode 117 has an inverted “T”-shape, only both end sides of the drain electrode 117 overlap the gate electrode. Thus, the overlapped area (depicted in oblique lines) is reduced and minimized, and the gate-drain parasitic capacitance C_{gd} is also reduced and minimized.

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tion. If the left portion “ A_1 ” of the overlapped area is decreased due to horizontal misalignment, the right portion “ A_2 ” is increased. Thus, the overlapped area between the drain electrode 117 and the gate electrode 115 is maintained uniformly even though misalignment occurs. Therefore, the variation of the gate-drain parasitic capacitance is reduced and minimized.

As described hereinbefore, according to the principles of the present invention, a portion of the gate line is used as the gate electrode. And a portion of the gate electrode is patterned so as to form a certain-shaped opening. Accordingly, there is a reduced overlap area between the

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gate electrode and the drain electrode. As a result, the gate-drain parasitic capacitance is reduced and minimized. Moreover, although misalignment occurs between the drain and gate electrodes, this misalignment is compensated according to the present invention. Thus, the variation of the gate-drain parasitic capacitance is prevented.

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EXHIBIT 11
U.S. PATENT NO. 6,664,569
TERMS IN DISPUTE

ASSERTED CLAIM 17

17. A liquid crystal display (LCD) device, comprising:
 a substrate;
 a gate line on the substrate and extending along a first direction, the gate line having an opening therein;
 a first insulating layer on the gate line;
 a semiconductor layer on the first insulating layer over at least a portion of the opening;
 a data line on the insulating layer and extending along a second direction substantially perpendicular to the first direction;
 a drain electrode on the semiconductor layer over at least a portion of the opening; and
 a source electrode on the semiconductor layer, extending from the data line and being separated and spaced apart from the drain electrode.

LGD's Claim Construction

a gate line¹ – a pattern of electrically conductive material that conveys gate signals to transistors, a portion of which controls current flow through the channel between the source and drain electrodes

pixel electrode² – a pattern of transparent electrically conductive material that stores charge to drive the liquid crystal material within an individual element of the liquid crystal display device

connects - joins

ASSERTED CLAIM 19

19. The LCD device to claim 18, further comprising a pixel electrode disposed in a pixel region that is defined by an intersection of the gate and data lines, the pixel electrode contacting the drain electrode through the drain contact hole.

ASSERTED CLAIM 34

34. The liquid crystal display device of claim 32, wherein the second electrode of the drain electrode connects the first and third electrodes of the drain electrodes.

¹ Disputed Term “a gate line” also appears in asserted claim 25 in the same context.

² Disputed Term “pixel electrode” also appears in asserted claim 32 in the same context.

INTRINSIC EVIDENCE FOR DISPUTED TERM “A GATE LINE”:

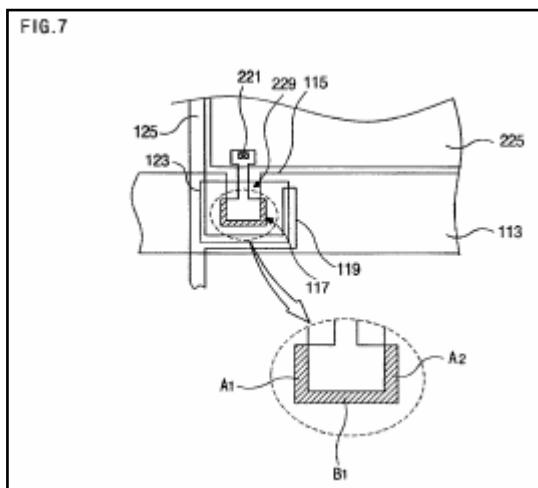
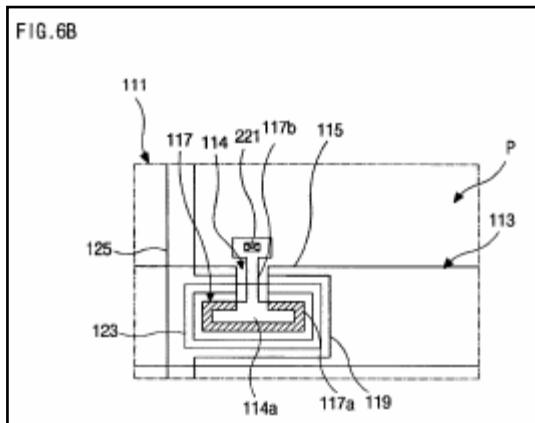
Still referring to FIG. 2, the gate line 13 supplies scanning signals to the gate electrode 31 of the TFT “T” such that the switching element, i.e., the TFT, turns ON. The scanning signals transmitted to the gate line 13 then control the magnitude of the data signals transmitted from the data line 15 to the pixel electrode 17 via the TFT “T.” The data signals

2:23-28

according to a first embodiment. As shown, the array substrate includes a gate line 113, which is arranged in a horizontal direction, and a data line 125, which is arranged in a vertical direction. The gate line 113 has a portion used for a gate electrode 115 near the crossing of the gate and data lines 113 and 125. In the central portion of the gate line 113 used for gate electrode 115, an inverted “T”-shaped opening 114 is formed. The source electrode 119 is extended from the data line 125, and has a quadrilateral opening in its central portion. Thus, the source electrode 119 surrounds the

5:44-53

INTRINSIC EVIDENCE FOR DISPUTED TERM “PIXEL ELECTRODE”:



defined by the gate and data lines 13 and 15. The area defined thereby is a pixel region “P”. The pixel electrode 17 is usually formed from a transparent conductive material having good transmissivity, for example, indium-tin-oxide (ITO) or indium-zinc-oxide (IZO).

The pixel and common electrodes 17 and 18 generate electric fields that control the light passing through the liquid crystal cells provided therebetween. By controlling the electric fields, desired characters or images are displayed.

1:40-48

INTRINSIC EVIDENCE FOR DISPUTED TERM “PIXEL ELECTRODE” (cont’d):

Moreover, the array substrate further includes a pixel electrode 17 formed on a pixel region “P” that is defined by the gate and data lines 13 and 15. The pixel electrode 17 is electrically connected with the drain electrode 35 through a drain contact hole 36, and is usually made of a transparent conductive material such as indium tin oxide (ITO) and indium zinc oxide (IZO). A portion of the pixel electrode 17 overlaps a portion of the gate line 13 such that a storage capacitor “C” is comprised of the pixel electrode 17 and gate line 13 and the interposed dielectric layer (not show).

2:13-22

disposed over the pixel electrode 17. When the scanning signals are not supplied to the gate line 13, the TFT “T” is turned OFF. At this time, electric charges stored in the pixel are discharged through the TFT “T” and through the liquid crystals. In this discharge phenomenon, if the off resistance is larger or if the pixel area is smaller for improving the resolution, the electric charges stored in the pixel are more rapidly discharged.

2:31-38

INTRINSIC EVIDENCE FOR DISPUTED TERM
“CONNECTS”:

The array substrate further includes a second insulation layer formed over the thin film transistor, the second insulation layer having a drain contact hole that exposes a portion of the drain electrode; and a pixel electrode formed in a pixel region that is defined by the gate and data lines, the pixel electrode contacting the drain electrode through the drain contact hole.

4:41-47

Now, referring to FIG. 6C, a transparent conductive material such as indium-tin-oxide (ITO) or indium-zinc-oxide (IZO) is deposited on the above-mentioned second insulation layer. After that, the transparent conductive material is patterned to form a pixel electrode 225 in the pixel region “P” (see FIG. 6B). And thus, the pixel electrode 225 contacts the drain electrode 117 through the drain contact hole 221.

7:33-40

EXHIBIT 11
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TERMS IN DISPUTE

ASSERTED CLAIM 17

17. A liquid crystal display (LCD) device, comprising:
 a substrate;
 a gate line on the substrate and extending along a first direction, the gate line having an opening therein;
 a first insulating layer on the gate line;
 a semiconductor layer on the first insulating layer over at least a portion of the opening;
 a data line on the insulating layer and extending along a second direction substantially perpendicular to the first direction;
 a drain electrode on the semiconductor layer over at least a portion of the opening; and
 a source electrode on the semiconductor layer, extending from the data line and being separated and spaced apart from the drain electrode.

LGD's Claim Construction

a semiconductor layer on the first insulating layer over at least a portion of the opening – a layer of semiconductor material, above and supported by or in contact with the first insulating layer, a portion of which overlaps part of the space in the gate line

a drain electrode on the semiconductor layer over at least a portion of the opening – a drain electrode, above and supported by or in contact with the semiconductor layer, a portion of which overlaps part of the space in the gate line

INTRINSIC EVIDENCE FOR DISPUTED TERM "A
SEMICONDUCTOR LAYER ON THE FIRST INSULATING LAYER
OVER AT LEAST A PORTION OF THE OPENING":

Thereafter, an amorphous silicon layer and impurity-included-amorphous silicon layer are formed successively. The amorphous silicon layer and the impurity-included-amorphous silicon layer are patterned into an island-shaped layer so as to form a semiconductor layer 123. As shown in FIG. 6A, the semiconductor layer 123 is located over the inverted "T"-shaped opening 114 of the gate electrode 115 and is larger than the first opening portion 114a.

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INTRINSIC EVIDENCE FOR DISPUTED TERM “A DRAIN ELECTRODE ON THE SEMICONDUCTOR LAYER OVER AT LEAST A PORTION OF THE OPENING”:

Still referring to FIG. 5, in order to decrease an overlapped area between the gate electrode 115 and the drain

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electrode 117, the portion of the gate electrode 115 under the drain electrode 117 is etched such that the inverted “T”-shaped opening 114 is formed. In other words, the portion of the gate electrode 115 corresponding to the first electrode portion 117a of the drain electrode 117 is etched in a smaller area than the first electrode portion 117a. Thus, edges of the first electrode portion 117a of the drain electrode 117 overlap the gate electrode 115. Moreover, a portion of the gate electrode 115 under the second electrode portion 117b is etched in a wider area than the second electrode portion 117b of the drain electrode 117. Thus, the gate electrode 115 is not overlapped by this second electrode portion 117b.

Accordingly, as described above, since the edges of the first electrode portion 117a of the drain electrode 117 only overlap the gate electrode 115, the gate-drain parasitic capacitance that depends on the overlapped area is minimized.

5:66-6:17

that the source electrode 119 surrounds the first opening portion 114a of the inverted “T”-shaped opening 114. Also, the drain electrode 117 is simultaneously formed over the inverted “T”-shaped opening 114 in the same plane as the source electrode 119.

7:1-5

INTRINSIC EVIDENCE FOR DISPUTED TERM “A DRAIN ELECTRODE ON THE SEMICONDUCTOR LAYER OVER AT LEAST A PORTION OF THE OPENING” (cont’d):

Moreover, referring to the enlarged view of the drain electrode 117 of FIG. 7, any misalignment occurring in the step of forming the drain electrode 117 is compensated. When forming the drain electrode 117 over the rectangle-shaped opening 229 of the gate electrode 115, the drain electrode 117 can be misaligned in a horizontal or vertical direction. If the left portion “A₁” of the overlapped area is decreased due to horizontal misalignment, the right portion “A₂” is increased. In this manner, if the bottom portion “B₁” of the overlapped area is decreased due to vertical misalignment, the left and right portions “A₁” and “A₂” are increased. Thus, the overlapped area between the drain electrode 117 and the gate electrode 115 is maintained uniformly even though the misalignment occurs. Therefore, the variation of the gate-drain parasitic capacitance is lowered and minimized.

8:13-28

As shown in FIG. 8, the gate line 113 is arranged in a horizontal direction and the data line 125 is arranged in a vertical direction perpendicular to the gate line 113. The source electrode 119 is extended from the data line 125 and has a “U”-shape. A rectangle-shaped opening is formed in a portion for the gate electrode 115 in the gate line 113. Also, the drain electrode 117 is formed over the rectangle-shaped opening of the gate electrode 115. Although the drain electrode 117 has an inverted “T”-shape, only both end sides of the drain electrode 117 overlap the gate electrode. Thus, the overlapped area (depicted in oblique lines) is reduced and minimized, and the gate-drain parasitic capacitance C_{gd} is also reduced and minimized.

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EXHIBIT 11
U.S. PATENT NO. 6,664,569
TERMS IN DISPUTE

ASSERTED CLAIM 25

25. A liquid crystal display (LCD) device, comprising:
 a substrate;
 a gate line on the substrate and extending along a first direction, the gate line including a gate electrode, the gate electrode having an opening therein, wherein the opening includes a first opening portion and a second opening portion;
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 a first insulating layer on the gate line;
 a semiconductor layer on the first insulating layer;
 a data line on the insulating layer and extending along a second direction;
 a drain electrode having **a first electrode** and **a second electrode**, the first electrode of the drain electrode overlapping at least a part of the first opening portion of the gate electrode; and
 a source electrode on the semiconductor layer, extending from the data line and being separated and spaced apart from the drain electrode.

LGD's Claim Construction

a first electrode – a first portion of the drain electrode to primarily compensate for gate-drain layer misalignment

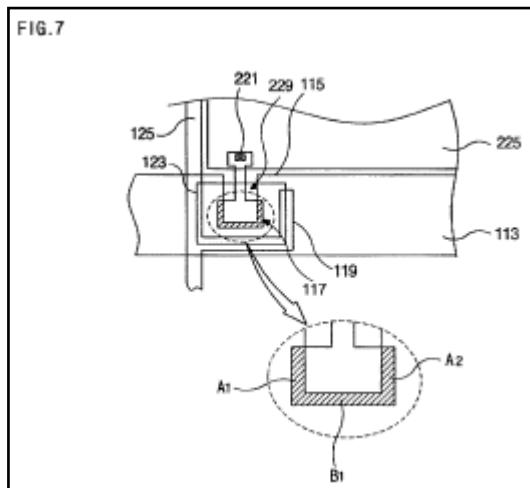
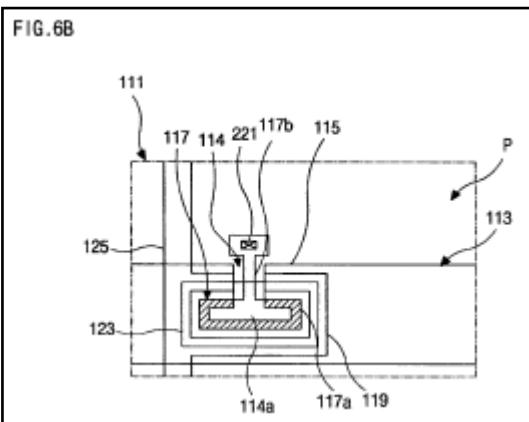
a second electrode – a second portion of the drain electrode to primarily reduce gate-drain capacitance

ASSERTED CLAIM 32

32. The liquid crystal display device of claim 25, further comprising a pixel electrode and the drain electrode further comprising **a third electrode** contacting the pixel electrode.

a third electrode – a third portion of the drain electrode to primarily connect to the pixel electrode

INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST ELECTRODE” AND “A SECOND ELECTRODE”:



INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST ELECTRODE” AND “A SECOND ELECTRODE” (cont'd):

Still referring to FIG. 5, in order to decrease an overlapped area between the gate electrode 115 and the drain

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electrode 117, the portion of the gate electrode 115 under the drain electrode 117 is etched such that the inverted “T”-shaped opening 114 is formed. In other words, the portion of the gate electrode 115 corresponding to the first electrode portion 117a of the drain electrode 117 is etched in a smaller area than the first electrode portion 117a. Thus, edges of the first electrode portion 117a of the drain electrode 117 overlap the gate electrode 115. Moreover, a portion of the gate electrode 115 under the second electrode portion 117b is etched in a wider area than the second electrode portion 117b of the drain electrode 117. Thus, the gate electrode 115 is not overlapped by this second electrode portion 117b.

Accordingly, as described above, since the edges of the first electrode portion 117a of the drain electrode 117 only overlap the gate electrode 115, the gate-drain parasitic capacitance that depends on the overlapped area is minimized.

5:66-6:17

Still referring to FIGS. 6B and 9, the drain electrode 117 is patterned into an inverted “T”-shape and corresponds to the inverted “T”-shaped opening 114 of the gate electrode 115. Again, the drain electrode 117 is divided into the first electrode portion 117a and the second electrode portion 117b. The first electrode portion 117a overlaps the gate electrode 115 such that the edges of the first electrode portion 117a form a “U”-shaped overlapped area (depicted by oblique lines) with the gate electrode 115. The second electrode portion 117b is vertically extended from the first electrode portion 117a over the pixel area “P,” and does not overlap the gate electrode 115 due to the fact that the second electrode portion 117b is narrower than the second opening portion 114b of FIG. 6A. Moreover, the drain electrode 117 is spaced apart from the source electrode 119, and the first electrode portion 117a of the drain electrode 117 is surrounded by the source electrode 119 along the steps of the semiconductor layer 123.

7:6-23

INTRINSIC EVIDENCE FOR DISPUTED TERM “A THIRD ELECTRODE”:

The array substrate further includes a second insulation layer formed over the thin film transistor, the second insulation layer having a drain contact hole that exposes a portion of the drain electrode; and a pixel electrode formed in a pixel region that is defined by the gate and data lines, the pixel electrode contacting the drain electrode through the drain contact hole.

4:40-46

Now, referring to FIG. 6C, a transparent conductive material such as indium-tin-oxide (ITO) or indium-zinc-oxide (IZO) is deposited on the above-mentioned second insulation layer. After that, the transparent conductive material is patterned to form a pixel electrode 225 in the pixel region “P” (see FIG. 6B). And thus, the pixel electrode 225 contacts the drain electrode 117 through the drain contact hole 221.

7:33-40

EXHIBIT L-12

Ex. L-12
LGD US PATENT NO. 7,218,374

INDEX OF DISPUTED TERMS

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auxiliary sealant	7
a dummy region	7
connects to the main sealant	13
wherein the auxiliary UV sealant is formed in a dummy region and extends outside from the main UV sealant	7
wherein the auxiliary sealant and the main sealant are contiguous	1
wherein the auxiliary UV sealant contacts the main UV sealant.....	13
applying a liquid crystal on one of the lower and upper substrates	13
attaching the lower and upper substrates	13

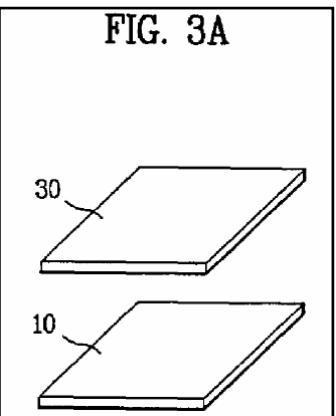
EXHIBIT L-12
U.S. PATENT NO. 7,218,374
TERMS IN DISPUTE

<u>ASSERTED CLAIM 1</u>	<u>LGD's Claim Construction</u>
<p>1. A method of manufacturing a liquid crystal display (LCD) device comprising:</p> <p style="margin-left: 20px;">preparing a lower substrate and an upper substrate; forming an auxiliary sealant and subsequently forming a main sealant on one of the lower and upper substrates, wherein the auxiliary sealant is formed in a dummy region and connects to the main sealant, and wherein the auxiliary sealant and the main sealant are contiguous;</p> <p style="margin-left: 20px;">applying a liquid crystal on one of the lower and upper substrates;</p> <p style="margin-left: 20px;">attaching the lower and upper substrates; and curing at least the main sealant.</p>	<p>preparing a lower substrate and an upper substrate¹ – making the substrates ready for depositing sealant and liquid crystal material prior to attachment</p> <p>forming a main sealant – depositing sealant material that encloses the display region</p> <p>wherein the auxiliary sealant and the main sealant are contiguous – wherein the auxiliary and main sealants are deposited in a continuous process</p>

¹ Disputed Term “preparing a lower substrate and an upper substrate” also appears in asserted claim 21 in the same context.

**INTRINSIC EVIDENCE FOR DISPUTED TERM “PREPARING
A LOWER SUBSTRATE AND UPPER SUBSTRATE”:**

FIG. 3A



As shown in FIG. 3A, a lower substrate **10** and an upper substrate **30** are prepared for the process. A plurality of gate and data lines (not shown) are formed on the lower substrate **10**. The gate lines cross the data lines to define a pixel region. A thin film transistor (not shown) having a gate electrode, a gate insulating layer, a semiconductor layer, an ohmic contact layer, source/drain electrodes, and a protection layer is formed at each crossing point of the gate lines and the data lines. A pixel electrode (not shown) connected with the thin film transistor is formed in the pixel region.

An alignment film (not shown) is formed on the pixel electrode to initially align the molecules of liquid crystal. The alignment film may be formed of polyamide or polyimide based compound, polyvinylalcohol (PVA), and polyamic acid by rubbing. Alternatively, the alignment film may be formed of a photosensitive material, such as polyvinylcinnamate (PVCN), polysiloxane cinnamate (PSCN) or cellulosecinnamate (CelCN) based compound, by using a photo-alignment method.

A light-shielding layer (not shown) is formed on the upper substrate **30** to shield light leakage from the gate lines, the data lines, and the thin film transistor regions. A color filter layer (not shown) of R, G, and B is formed on the light-shielding layer. A common electrode (not shown) is formed on the color filter layer. Additionally, an overcoat layer (not shown) may be formed between the color filter layer and the common electrode. The alignment film is formed on the common electrode.

Silver (Ag) dots are formed outside the lower substrate **10** to apply a voltage to the common electrode on the upper substrate **30** after the lower and upper substrates **10** and **30** are attached to each other. Alternatively, the silver dots may be formed on the upper substrate **30**.

For an in plane switching (IPS) mode LCD, the common electrode is formed on the lower substrate like the pixel electrode, and so that an electric field can be horizontally induced between the common electrode and the pixel electrode. The silver dots are not formed on the substrate.

4:30-67

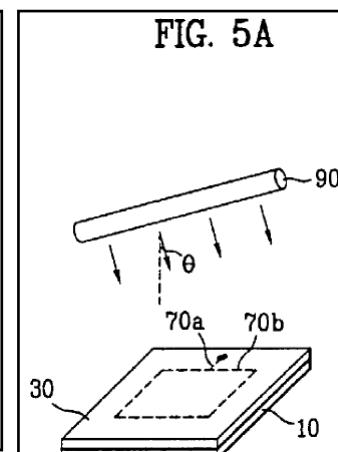
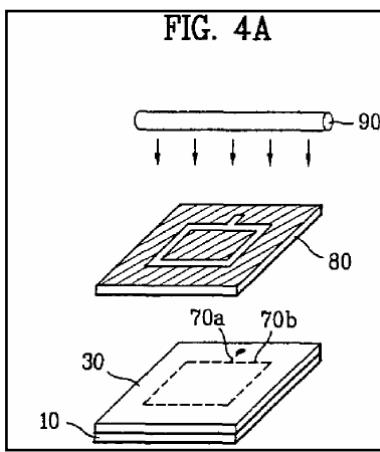
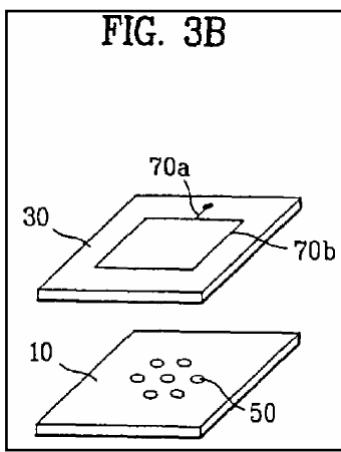
EX 12

EXTRINSIC EVIDENCE FOR DISPUTED TERM “PREPARING A LOWER SUBSTRATE AND UPPER SUBSTRATE”:

pre•pare \pri-'par, -'per\ **vb** **pre•pared; pre•par•ing** [ME, fr. MF *préparer*, fr. L *praeparare*, fr. *prae-* pre- + *parare* to procure, prepare — more at PARE] **vt** (15c) 1 **a** : to make ready beforehand for some purpose, use, or activity (⟨~ food for dinner⟩) **b** : to put in a proper state of mind (⟨is prepared to listen⟩) 2 : to work out the details of : plan in advance (⟨preparing strategy for the coming campaign⟩) 3 **a** : to put together : COMPOUND (⟨~ a prescription⟩) **b** : to put into written form (⟨~ a report⟩) ~ **vi** : to get ready (⟨preparing for a career⟩) —

Merriam-Webster's Collegiate Dictionary, Tenth Edition, (1994), pg. 920

INTRINSIC EVIDENCE FOR DISPUTED TERM “FORMING A MAIN SEALANT”:



Meanwhile, FIGS. 2A and 2B are perspective views illustrating a process of forming a UV sealant using a dispensing method. In the method of applying liquid crystal to one of the substrates before attaching the substrates, since no liquid crystal injection hole is required, a sealant 7 having no injection hole is formed on a lower substrate 1 using a dispensing device 8.

2:34-40

In one embodiment of the present invention, the supplementary UV sealant does not perform the ordinary function of a sealant, that is, it does not prevent the liquid crystal from leaking out. While the main UV sealant acts as a sealant to confine the liquid crystal.

3:23-24

An auxiliary UV curable sealant 70a is formed in a dummy area at a corner region of the upper substrate 30, subsequently, a main UV curable sealant 70b having no injection hole is formed, using a dispensing method.

5:5-6

As shown in FIGS. 6 and 7, an LCD device according to the present invention includes lower and upper substrates 10 and 30, a UV sealant between the lower and upper substrates 10 and 30, having an auxiliary UV sealant 70a in a dummy area and a perimeter of main UV sealant 70b connected to

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the auxiliary UV sealant 70a, and a liquid crystal layer 50 between the lower and upper substrates 10 and 30.

7:67-8:01

INTRINSIC EVIDENCE FOR DISPUTED TERMS “WHERE IN THE AUXILIARY SEALANT AND THE MAIN SEALANT ARE CONTIGUOUS”:

An auxiliary UV curable sealant 70a is formed in a dummy area at a corner region of the upper substrate 30, subsequently, a main UV curable sealant 70b having no injection hole is formed, using a dispensing method.

The auxiliary UV sealant 70a prevents any problem that may occur due to a sealant concentrated upon the end of a nozzle of a dispensing device. Therefore, it does not matter where the auxiliary UV sealant 70a is formed in the dummy area of the substrate, i.e., any blob of sealant will be formed away from the active region of the liquid crystal display device and away from a region where the liquid crystal panel will be cut away from the mother substrate assembly. Formation of the main UV sealant 70b is preceded by the formation of the auxiliary UV sealant 70a. The auxiliary UV sealant 70a may be formed in a straight line as shown. Alternatively, the auxiliary UV sealant 70a may be formed in a curved line or other shape as long as it is formed in a dummy region.

5:3-20

As shown in FIGS. 6 and 7, an LCD device according to the present invention includes lower and upper substrates 10 and 30, a UV sealant between the lower and upper substrates 10 and 30, having an auxiliary UV sealant 70a in a dummy area and a perimeter of main UV sealant 70b connected to

the auxiliary UV sealant 70a, and a liquid crystal layer 50 between the lower and upper substrates 10 and 30.

7:67-8:01

In one aspect of the present invention, the supplementary UV sealant is formed in a dummy region on the substrate and then the closed type main UV sealant is formed, so that the sealant concentrated upon the end of a nozzle of a dispensing device is formed in the dummy region on the substrate.

3:35-40

Since the sealant concentrated upon the end of the nozzle of the dispensing device is formed in the dummy area on the substrate, the liquid crystal layer is not contaminated by the attaching process of the substrates and the cell cutting process is easily performed.

8:14-18

EXTRINSIC EVIDENCE FOR DISPUTED TERMS “WHERE IN THE AUXILIARY SEALANT AND THE MAIN SEALANT ARE CONTIGUOUS”:

con-tig-u-ous \kən-'ti-gyə-wəs\ adj [L *contiguus*, fr. *contingere* to have contact with — more at **CONTINGENT**] (ca. 1609) 1 : being in actual contact : touching along a boundary or at a point 2 *of angles* : ADJACENT 2 3 : next or near in time or sequence 4 : touching or connected throughout in an unbroken sequence (as row houses) *syn* see **ADJACENT** — **con-tig-u-ous-ly** *adv* — **con-tig-u-ous-ness** *n*

Merriam-Webster's Collegiate Dictionary, Tenth Edition, (1994), pg. 250

con-tin-u-ous \kən-'tin-yü-əs\ adj [L *continuus*, fr. *continēre* to hold together — more at **CONTAIN**] (1673) 1 : marked by uninterrupted extension in space, time, or sequence 2 *of a function* : having the property that the absolute value of the numerical difference between the value at a given point and the value at any point in a neighborhood of the given point can be made as close to zero as desired by choosing the neighborhood small enough *syn* see **CONTINUAL** — **con-tin-u-ous-ly** *adv* — **con-tin-u-ous-ness** *n*

Merriam-Webster's Collegiate Dictionary, Tenth Edition, (1994), pg. 251

EXHIBIT 12
U.S. PATENT NO. 7,218,374
TERMS IN DISPUTE

ASSERTED CLAIM 1

1. A method of manufacturing a liquid crystal display (LCD) device comprising:
 preparing a lower substrate and an upper substrate;
 forming an auxiliary sealant and subsequently forming a main sealant on one of the lower and upper substrates, wherein the auxiliary sealant is formed in a dummy region and connects to the main sealant, and wherein the auxiliary sealant and the main sealant are contiguous;
 applying a liquid crystal on one of the lower and upper substrates;
 attaching the lower and upper substrates; and
 curing at least the main sealant.

LGD's Claim Construction

main sealant¹ – sealant material that encloses the display region

auxiliary sealant² – sealant deposited in an area outside of the main sealant

a dummy region – an area outside of the main sealant

ASSERTED CLAIM 21

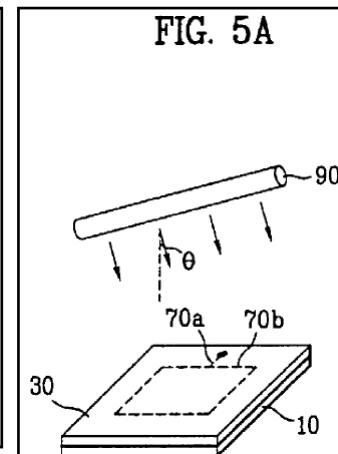
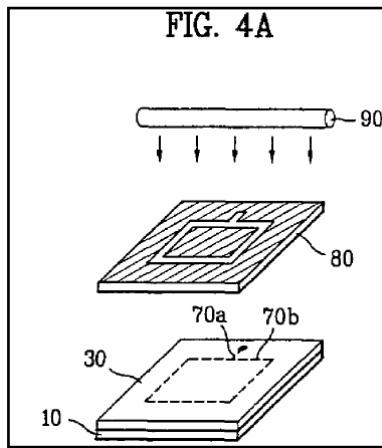
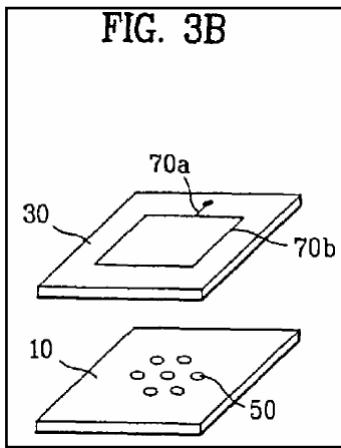
21. A method of manufacturing a liquid crystal display (LCD) device comprising:
 preparing a lower substrate and an upper substrate;
 forming an auxiliary UV sealant and a main UV sealant on one of the lower and upper substrates, wherein the auxiliary UV sealant is formed in a dummy region and extends outside from the main UV sealant, wherein the auxiliary UV sealant contacts the main UV sealant;
 applying a liquid crystal on one of the lower and upper substrates;
 attaching the lower and upper substrates; and
 irradiating UV light on the attached substrates.

wherein the auxiliary UV sealant is formed in a dummy region and extends outside from the main UV sealant –
 wherein the auxiliary UV sealant is deposited in an area that is outside of the main UV sealant and is joined to the main UV sealant

¹ Disputed Term “main sealant” also appears in asserted claims 2, and 20 in the same context.

² Disputed Term “auxiliary sealant” also appears in asserted claims 2, 17, and 20 in the same context.

INTRINSIC EVIDENCE FOR DISPUTED TERM “MAIN SEALANT”:



Meanwhile, FIGS. 2A and 2B are perspective views illustrating a process of forming a UV sealant using a dispensing method. In the method of applying liquid crystal to one of the substrates before attaching the substrates, since no liquid crystal injection hole is required, a sealant 7 having no injection hole is formed on a lower substrate 1 using a dispensing device 8.

2:34-40

In one embodiment of the present invention, the supplementary UV sealant does not perform the ordinary function of a sealant, that is, it does not prevent the liquid crystal from leaking out. While the main UV sealant acts as a sealant to confine the liquid crystal.

3:23-24

An auxiliary UV curable sealant 70a is formed in a dummy area at a corner region of the upper substrate 30, subsequently, a main UV curable sealant 70b having no injection hole is formed, using a dispensing method.

5:5-6

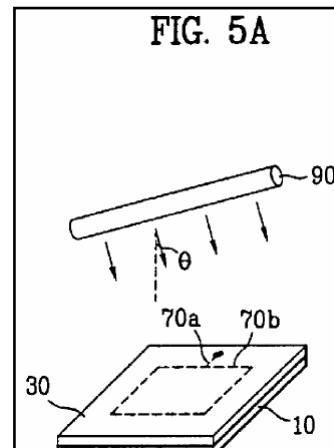
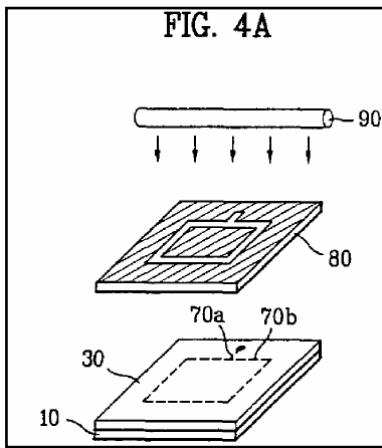
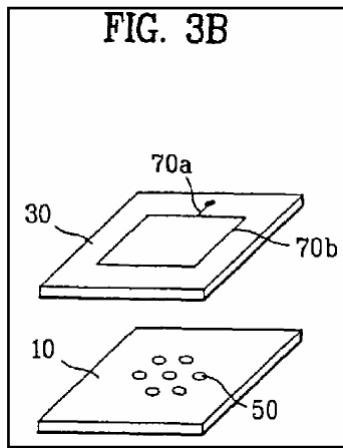
As shown in FIGS. 6 and 7, an LCD device according to the present invention includes lower and upper substrates 10 and 30, a UV sealant between the lower and upper substrates 10 and 30, having an auxiliary UV sealant 70a in a dummy area and a perimeter of main UV sealant 70b connected to

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the auxiliary UV sealant 70a, and a liquid crystal layer 50 between the lower and upper substrates 10 and 30.

7:67-8:01

INTRINSIC EVIDENCE FOR DISPUTED TERM “AUXILIARY SEALANT”:



An auxiliary UV curable sealant 70a is formed in a dummy area at a corner region of the upper substrate 30, subsequently, a main UV curable sealant 70b having no injection hole is formed, using a dispensing method.

The auxiliary UV sealant 70a is prevents any problem that may occur due to a sealant concentrated upon the end of a nozzle of a dispensing device. Therefore, it does not matter where the auxiliary UV sealant 70a is formed in the dummy area of the substrate, i.e., any blob of-sealant will be formed away from the active region of the liquid crystal display device and away from a region where the liquid crystal panel will be cut away from the mother substrate assembly. Formation of the main UV sealant 70b is preceded by the formation of the auxiliary UV sealant 70a. The auxiliary UV sealant 70a may be formed in a straight line as shown. Alternatively, the auxiliary UV sealant 70a may be formed in a curved line or other shape as long as it is formed in a dummy region.

5:3-20

As shown in FIGS. 6 and 7, an LCD device according to the present invention includes lower and upper substrates 10 and 30, a UV sealant between the lower and upper substrates 10 and 30, having an auxiliary UV sealant 70a in a dummy area and a perimeter of main UV sealant 70b connected to

the auxiliary UV sealant 70a, and a liquid crystal layer 50 between the lower and upper substrates 10 and 30.

7:67-8:01

INTRINSIC EVIDENCE FOR DISPUTED TERMS “DUMMY REGION”:

In one aspect of the present invention, the supplementary UV sealant is formed in a dummy region on the substrate and then the closed type main UV sealant is formed, so that the sealant concentrated upon the end of a nozzle of a dispensing device is formed in the dummy region on the substrate.

3:35-40

An auxiliary UV curable sealant 70a is formed in a dummy area at a corner region of the upper substrate 30, subsequently, a main UV curable sealant 70b having no injection hole is formed, using a dispensing method.

The auxiliary UV sealant 70a prevents any problem that may occur due to a sealant concentrated upon the end of a nozzle of a dispensing device. Therefore, it does not matter where the auxiliary UV sealant 70a is formed in the dummy area of the substrate, i.e., any blob of sealant will be formed away from the active region of the liquid crystal display device and away from a region where the liquid crystal panel will be cut away from the mother substrate assembly. Formation of the main UV sealant 70b is preceded by the formation of the auxiliary UV sealant 70a. The auxiliary UV sealant 70a may be formed in a straight line as shown. Alternatively, the auxiliary UV sealant 70a may be formed in a curved line or other shape as long as it is formed in a dummy region.

5:3-20

Since the sealant concentrated upon the end of the nozzle of the dispensing device is formed in the dummy area on the substrate, the liquid crystal layer is not contaminated by the attaching process of the substrates and the cell cutting process is easily performed.

8:14-18

INTRINSIC EVIDENCE FOR DISPUTED TERMS “WHEREIN THE AUXILIARY UV SEALANT IS FORMED IN A DUMMY REGION AND EXTENDS OUTSIDE FROM THE MAIN UV SEALANT”:

An auxiliary UV curable sealant 70a is formed in a dummy area at a corner region of the upper substrate 30, subsequently, a main UV curable sealant 70b having no injection hole is formed, using a dispensing method.

The auxiliary UV sealant 70a prevents any problem that may occur due to a sealant concentrated upon the end of a nozzle of a dispensing device. Therefore, it does not matter where the auxiliary UV sealant 70a is formed in the dummy area of the substrate, i.e., any blob of sealant will be formed away from the active region of the liquid crystal display device and away from a region where the liquid crystal panel will be cut away from the mother substrate assembly. Formation of the main UV sealant 70b is preceded by the formation of the auxiliary UV sealant 70a. The auxiliary UV sealant 70a may be formed in a straight line as shown. Alternatively, the auxiliary UV sealant 70a may be formed in a curved line or other shape as long as it is formed in a dummy region.

5:3-20

As shown in FIGS. 6 and 7, an LCD device according to the present invention includes lower and upper substrates 10 and 30, a UV sealant between the lower and upper substrates 10 and 30, having an auxiliary UV sealant 70a in a dummy area and a perimeter of main UV sealant 70b connected to

the auxiliary UV sealant 70a, and a liquid crystal layer 50 between the lower and upper substrates 10 and 30.

7:67-8:01

In one aspect of the present invention, the supplementary UV sealant is formed in a dummy region on the substrate and then the closed type main UV sealant is formed, so that the sealant concentrated upon the end of a nozzle of a dispensing device is formed in the dummy region on the substrate.

3:35-40

**INTRINSIC EVIDENCE FOR DISPUTED TERMS “WHEREIN
THE AUXILIARY UV SEALANT IS FORMED IN A DUMMY
REGION AND EXTENDS OUTSIDE FROM THE MAIN UV
SEALANT” (cont’d):**

An auxiliary UV curable sealant 70a is formed in a dummy area at a corner region of the upper substrate 30, subsequently, a main UV curable sealant 70b having no injection hole is formed, using a dispensing method.

The auxiliary UV sealant 70a is prevents any problem that may occur due to a sealant concentrated upon the end of a nozzle of a dispensing device. Therefore, it does not matter where the auxiliary UV sealant 70a is formed in the dummy area of the substrate, i.e., any blob of-sealant will be formed away from the active region of the liquid crystal display device and away from a region where the liquid crystal panel will be cut away from the mother substrate assembly. Formation of the main UV sealant 70b is preceded by the formation of the auxiliary UV sealant 70a. The auxiliary UV sealant 70a may be formed in a straight line as shown. Alternatively, the auxiliary UV sealant 70a may be formed in a curved line or other shape as long as it is formed in a dummy region.

5:3-20

Since the sealant concentrated upon the end of the nozzle of the dispensing device is formed in the dummy area on the substrate, the liquid crystal layer is not contaminated by the attaching process of the substrates and the cell cutting process is easily performed.

8:14-18

EXHIBIT 12
U.S. PATENT NO. 7,218,374
TERMS IN DISPUTE

ASSERTED CLAIM 1

1. A method of manufacturing a liquid crystal display (LCD) device comprising:
 preparing a lower substrate and an upper substrate;
 forming an auxiliary sealant and subsequently forming a main sealant on one of the lower and upper substrates, wherein the auxiliary sealant is formed in a dummy region and **connects to the main sealant**, and wherein the auxiliary sealant and the main sealant are contiguous;
applying a liquid crystal on one of the lower and upper substrates;
attaching the lower and upper substrates; and
 curing at least the main sealant.

LGD's Claim Construction

connects to the main sealant- joined to the main sealant

wherein the auxiliary UV sealant contacts the main UV sealant - wherein the UV sealant touches the main UV sealant

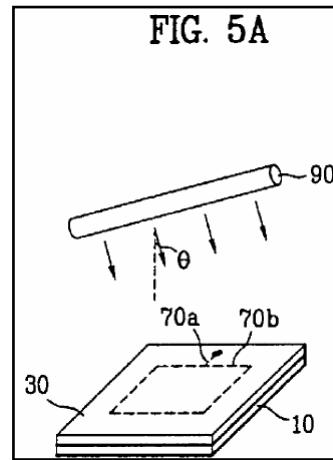
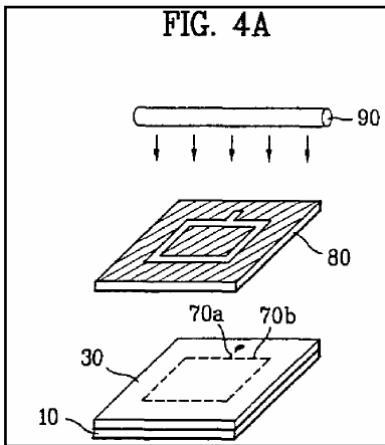
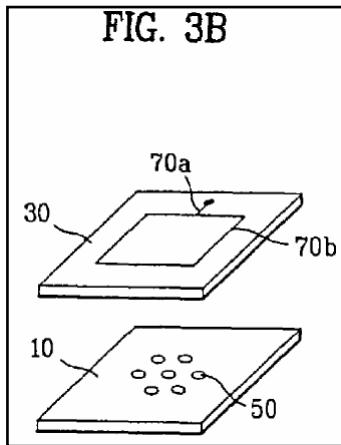
applying a liquid crystal on one of the lower and upper substrates – depositing the liquid crystal onto either one of the substrates

attaching the lower and upper substrates - pressing the lower and upper substrates together

ASSERTED CLAIM 21

21. A method of manufacturing a liquid crystal display (LCD) device comprising:
 preparing a lower substrate and an upper substrate;
 forming an auxiliary UV sealant and a main UV sealant on one of the lower and upper substrates, wherein the auxiliary UV sealant is formed in a dummy region and extends outside from the main UV sealant, **wherein the auxiliary UV sealant contacts the main UV sealant**;
applying a liquid crystal on one of the lower and upper substrates;
attaching the lower and upper substrates; and
 irradiating UV light on the attached substrates.

INTRINSIC EVIDENCE FOR DISPUTED TERM “CONNECTS TO THE MAIN SEALANT”:



As shown in FIGS. 6 and 7, an LCD device according to the present invention includes lower and upper substrates **10** and **30**, a UV sealant between the lower and upper substrates **10** and **30**, having an auxiliary UV sealant **70a** in a dummy area and a perimeter of main UV sealant **70b** connected to

the auxiliary UV sealant **70a**, and a liquid crystal layer **50** between the lower and upper substrates **10** and **30**.

7:67-8:01

While Figure 9 of Majima clearly illustrates the “dummy/auxiliary seals (8)” and the “main seal (7)” as cited by the Examiner, the Figure fails to illustrate wherein the two seals are connected, as recited in claim 1, or wherein the “dummy/auxiliary seals (8)” extend from the “main seal (7),” as recited in claim 21. It is respectfully submitted that the “opening 9” of Majima does not “connect” any portion of main seal 7 to the dummy sealant 8, as asserted by the Examiner. Further, Applicants respectfully submit that the entire disclosure of Majima is similarly silent with respect to the aforementioned claim elements. For at least this reason,

Response
After Final
Office Action
App. No.
10/184,118
Pg. 2

In the “Response to Arguments” section of the present Office Action, the Examiner acknowledges the arguments made above but maintains the rejection, stating that the recited limitations “‘wherein the auxiliary sealant . . . connects to the main sealant’ and ‘wherein the auxiliary UV sealant . . . extends from the main UV sealant’ can still be read by” Egami et al. and Majima which “disclose that two substrates are connected together by sealants.” Applicants respectfully submit, however, that two substrates being connected together by sealants cannot reasonably be synonymous with either an auxiliary sealant that is connected to a main sealant as provided in claim 1 or an auxiliary UV sealant that extends from a main UV sealant as provided in claim 21. For at least this additional reason, Applicants respectfully request withdrawal of the

Response
After Final
Office Action
App. No.
10/184,118
Pg. 3

INTRINSIC EVIDENCE FOR DISPUTED TERM “WHEREIN THE AUXILIARY UV SEALANT CONTACTS THE MAIN UV SEALANT”:

An auxiliary UV curable sealant 70a is formed in a dummy area at a corner region of the upper substrate 30, subsequently, a main UV curable sealant 70b having no injection hole is formed, using a dispensing method.

The auxiliary UV sealant 70a is prevents any problem that may occur due to a sealant concentrated upon the end of a nozzle of a dispensing device. Therefore, it does not matter where the auxiliary UV sealant 70a is formed in the dummy area of the substrate, i.e., any blob of sealant will be formed away from the active region of the liquid crystal display device and away from a region where the liquid crystal panel will be cut away from the mother substrate assembly. Formation of the main UV sealant 70b is preceded by the formation of the auxiliary UV sealant 70a. The auxiliary UV sealant 70a may be formed in a straight line as shown. Alternatively, the auxiliary UV sealant 70a may be formed in a curved line or other shape as long as it is formed in a dummy region.

5:3-20

As shown in FIGS. 6 and 7, an LCD device according to the present invention includes lower and upper substrates 10 and 30, a UV sealant between the lower and upper substrates 10 and 30, having an auxiliary UV sealant 70a in a dummy area and a perimeter of main UV sealant 70b connected to

the auxiliary UV sealant 70a, and a liquid crystal layer 50 between the lower and upper substrates 10 and 30.

7:67-8:01

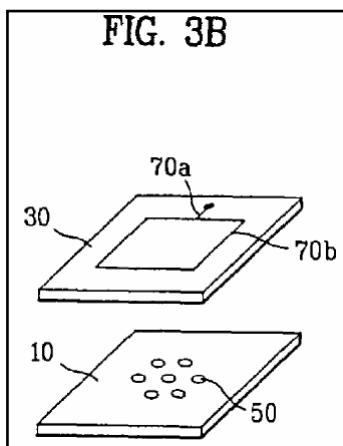
In one aspect of the present invention, the supplementary UV sealant is formed in a dummy region on the substrate and then the closed type main UV sealant is formed, so that the sealant concentrated upon the end of a nozzle of a dispensing device is formed in the dummy region on the substrate.

3:35-40

Since the sealant concentrated upon the end of the nozzle of the dispensing device is formed in the dummy area on the substrate, the liquid crystal layer is not contaminated by the attaching process of the substrates and the cell cutting process is easily performed.

8:14-18

INTRINSIC EVIDENCE FOR DISPUTED TERM “APPLYING A LIQUID CRYSTAL ON ONE OF THE LOWER AND UPPER SUBSTRATES”:



(57)

ABSTRACT

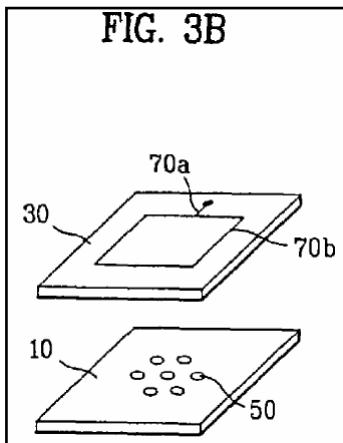
An LCD device and a method of manufacturing the same are disclosed, in which a sealant concentrated upon the end of a dispensing device is formed in a dummy region on a substrate, so that a liquid crystal layer is not contaminated when both substrates are attached to each other and a cell cutting process can easily be performed. The method of manufacturing an LCD device includes preparing a lower substrate and an upper substrate, forming an auxiliary UV sealant in a dummy region on one of the lower and upper substrate and forming a main UV sealant, applying a liquid crystal on one of the lower and upper substrates, attaching the lower and upper substrates, and irradiating UV light onto the attached substrates.

Abstract

Meanwhile, FIGS. 2A and 2B are perspective views illustrating a process of forming a UV sealant using a dispensing method. In the method of applying liquid crystal to one of the substrates before attaching the substrates, since no liquid crystal injection hole is required, a sealant 7 having no injection hole is formed on a lower substrate 1 using a dispensing device 8.

2:34-40

INTRINSIC EVIDENCE FOR DISPUTED TERM “APPLYING A LIQUID CRYSTAL ON ONE OF THE LOWER AND UPPER SUBSTRATES” (cont’d):



The liquid crystal 50 may be formed on the upper substrate 30 while the UV sealants 70a and 70b may be formed on the lower substrate 10. Alternatively, the liquid crystal 50 and the UV sealants 70a and 70b may be formed on one substrate. In this case, there is an imbalance between the processing times of the substrate with the liquid crystal and the sealants and the substrate without the liquid crystal and the sealants in the manufacturing process. For this reason, the total manufacturing process time increases. Also, when the liquid crystal and the sealants are formed on one substrate, the substrate may not be cleaned even if the sealant contaminates the panel before the substrates are attached to each other.

5:35-39

As shown in FIG. 3C, the lower substrate 10 and the upper substrate 30 are attached to each other by the following processes. First, one of the substrates having the liquid

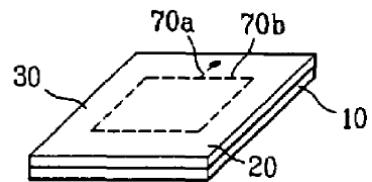
5:67

crystal dropped thereon is placed at the lower side. The other substrate is placed at the upper side by turning by 180 degrees so that its portion having layers faces into the substrate at the lower side. Thereafter, the substrate at the upper side is pressed, so that both substrates are attached to each other. Alternatively, the space between the substrates may be maintained under the vacuum state so that both substrates are attached to each other by releasing the vacuum state.

6:01-04

INTRINSIC EVIDENCE FOR DISPUTED TERM “ATTACHING THE LOWER AND UPPER SUBSTRATES”:

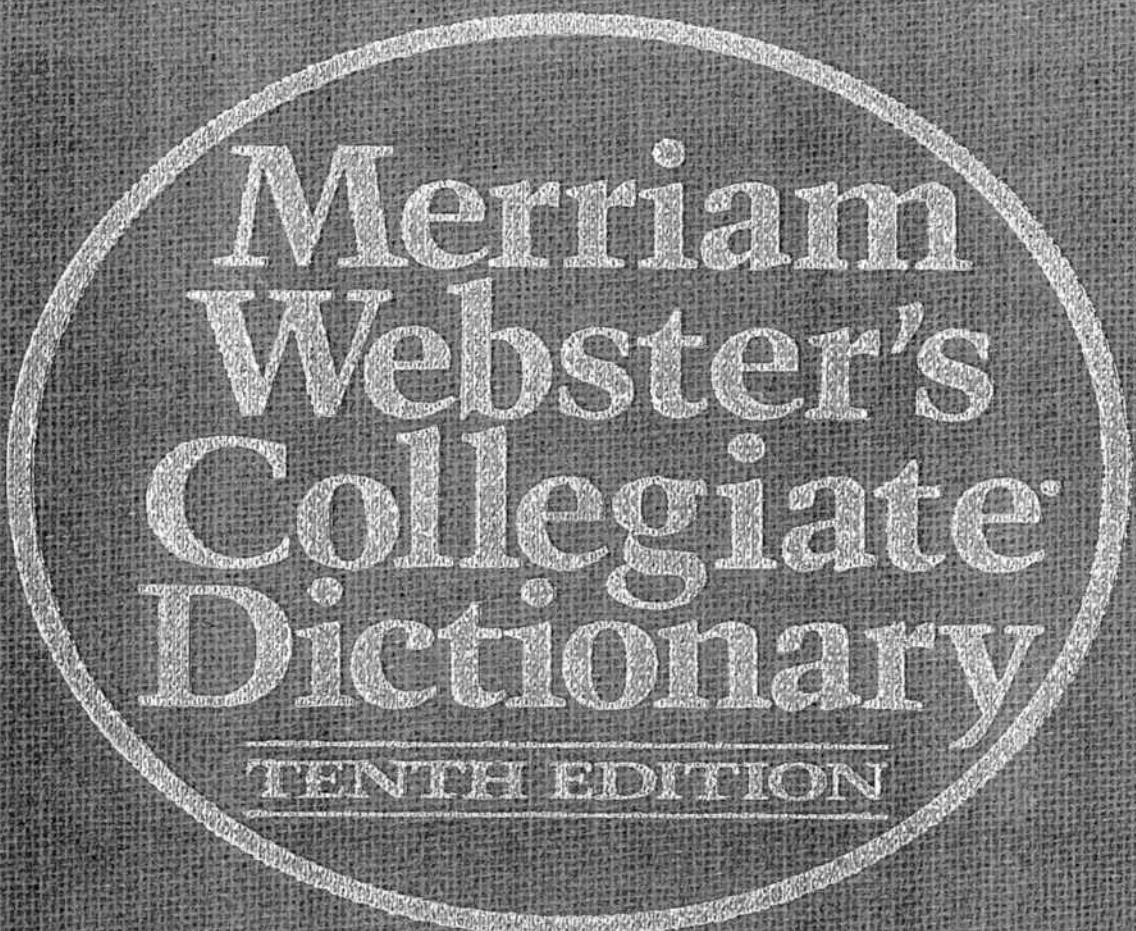
FIG. 3C



crystal dropped thereon is placed at the lower side. The other substrate is placed at the upper side by turning by 180 degrees so that its portion having layers faces into the substrate at the lower side. Thereafter, the substrate at the upper side is pressed, so that both substrates are attached to each other. Alternatively, the space between the substrates may be maintained under the vacuum state so that both substrates are attached to each other by releasing the vacuum state.

6:04-06

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Library of Congress Cataloging in Publication Data
Main entry under title:

Merriam-Webster's collegiate dictionary. — 10th ed.

p. cm.

ISBN 0-87779-708-0 (unindexed). — ISBN 0-87779-709-9 (indexed).

— ISBN 0-87779-710-2 (deluxe). — ISBN 0-87779-707-2 (laminated cover).

1. English language—Dictionaries.

PE1628.M36 1994

423—dc20

93-32603

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250 contemplative • continually

attention : STUDY 3 : the act of regarding steadily 4 : INTENTION, EXPECTATION

con-tem-pla-tive \kən-'tem-plə-tiv, 'kän-təm-plä-, -tem-\ adj (14c) : marked by or given to contemplation; *specif* : of or relating to a religious order devoted to prayer and penance — **con-tem-pla-tive-ly** adv — **con-tem-pla-tive-ness** n

contemplative n (14c) : a person who practices contemplation

con-tem-po-ra-nei-ty \kən-'tem-pə-rə-'ne-ə-tē, -'nā-\ n (1772) : the quality or state of being contemporaneous or contemporary

con-tem-po-ra-neous \kən-'tem-pə-'rā-nē-əs\ adj [L *contemporaneus*, fr. *com-* + *tempor*, *tempus* time] (ca. 1656) : existing, occurring, or originating during the same time *syn* see **CONTEMPORARY** — **con-tem-po-ra-neous-ly** adv — **con-tem-po-ra-neous-ness** n

con-tem-po-rary \kən-'tem-pə-'rē-ərē\ adj [com- + L *tempor*, *tempus*] (1631) 1 : happening, existing, living, or coming into being during the same period of time 2 a : SIMULTANEOUS b : marked by characteristics of the present period : MODERN, CURRENT — **con-tem-po-rar-i-ly** \-'tem-pə-'rē-ə-lē\ adv

syn **CONTEMPORARY**, **CONTEMPORANEOUS**, **COEVAL**, **SYNCHRONOUS**. **SIMULTANEOUS**, **COINCIDENT** mean existing or occurring at the same time. **CONTEMPORARY** is likely to apply to people and what relates to them. **CONTEMPORANEOUS** applies to events (contemporaneous accounts of the kidnapping). **COEVAL** refers usu. to periods, ages, eras, eons (two stars thought to be *coeval*). **SYNCHRONOUS** implies exact correspondence in time and esp. in periodic intervals (synchronous timepieces). **SIMULTANEOUS** implies correspondence in a moment of time (the two shots were *simultaneous*). **COINCIDENT** is applied to events and may be used in order to avoid implication of causal relationship (the end of World War II was *coincident* with a great vintage year).

contemporary n, pl -rari-ies (1646) 1 : one that is contemporary with another 2 : one of the same or nearly the same age as another

con-tem-po-ri-ze \kən-'tem-pə-'rīz\ vt -rized; -rizing (1646) : to make contemporary

con-tempt \kən-'tem(p)t\, n [ME, fr. L *contemptus*, fr. *contemnere*] (14c) 1 a : the act of despising : the state of mind of one who despises : **DISDAIN** b : lack of respect or reverence for something 2 : the state of being despised 3 : willful disobedience to or open disrespect of a court, judge, or legislative body (as of court)

con-tempt-ible \kən-'tem(p)-to-bal\ adj (14c) 1 : worthy of contempt 2 obs : SCORNFUL, **CONTEMPTUOUS** — **con-tempt-i-bil-i-ty** \-'tem(p)-ta-bi-lē\ n — **con-tempt-ible-ness** n — **con-tempt-ibly** \-'tem(p)-ta-bi-lē\ adv

syn **CONTEMPTIBLE**, **DESCIPABLE**, **PITIABLE**, **SORRY**, **SCURVY** mean arousing or deserving scorn. **CONTEMPTIBLE** may imply any quality provoking scorn or a low standing in any scale of values (as a *contemptible* liar). **DESCIPABLE** may imply utter worthlessness and usu. suggests arousing an attitude of moral indignation (as a *despicable* crime). **PITIABLE** applies to what inspires mixed contempt and pity (as a *pitiable* attempt at tragedy). **SORRY** may stress pitiable inadequacy or may suggest wretchedness or sordidness (this rattletrap is a *sorry* excuse for a car). **SCURVY** adds to **DESCIPABLE** an implication of arousing disgust (as a *scurvy* crew of hangers-on).

con-temp-tu-ous \-'tem(p)-cha-wəs, -chos, -shwəs\ adj [L *contemptus*] (1595) : manifesting, feeling, or expressing contempt — **con-temp-tu-ous-ly** adv — **con-temp-tu-ous-ness** n

con-tend \kən-'tend\ vb [ME, fr. MF or L; MF *contendre*, fr. L *contendere*, fr. *com-* + *tendere* to stretch — more at *THIN*] vi (15c) 1 : to strive or vie in contest or rivalry or against difficulties : **STRUGGLE** 2 : to strive in debate : **ARGUE** ~ vt 1 : MAINTAIN, **ASSERT** (~ed that he was right) 2 : to struggle for : **CONTEST**

con-tend-er \-'ten-dər\ n (1547) : one that contends; *esp* : a competitor for a championship or high honor (as a *heavyweight* title ~)

con-tent \kən-'tent\ adj [ME, fr. MF, fr. L *contentus*, fr. pp. of *continere* to hold in, contain — more at *CONTAIN*] (15c) : **CONTENTED**, SATISFIED

content vt (15c) 1 : to appease the desires of 2 : to limit (oneself) in requirements, desires, or actions

content n (1579) : **CONTENTMENT** (ate to his heart's ~)

con-tent \kən-'tent\ n [ME, fr. L *contentus*, pp. of *continere* to contain] (15c) 1 a : something contained — usu. used in pl. (the jar's ~s) (the drawer's ~s) b : the topics or matter treated in a written work (table of ~s) 2 a : SUBSTANCE, GIST b : MEANING, SIGNIFICANCE c : the events, physical detail, and information in a work of art — compare **FORM** 10b 3 a : the matter dealt with in a field of study b : a part, element, or complex of parts 4 : the amount of specified material contained : **PROPORTION**

content analysis n (1945) : analysis of the manifest and latent content of a body of communicated material (as a book or film) through a classification, tabulation, and evaluation of its key symbols and themes in order to ascertain its meaning and probable effect

con-tent-ed \kən-'ten-təd\ adj (1526) : feeling or manifesting satisfaction with one's possessions, status, or situation (as a ~ smile) — **con-tent-ed-ly** adv — **con-tent-ed-ness** n

con-tent-tion \kən-'ten(t)-shən\ n [ME *contencoun*, fr. MF, fr. L *contentio*, *contentio*, fr. *contendere*] (14c) 1 : an act or instance of contending 2 : a point advanced or maintained in a debate or argument

3 : RIVALRY, **COMPETITION** *syn* see **DISCORD**

con-ten-tious \kən-'ten(t)-shəs\ adj (15c) 1 : likely to cause contention (as a ~ argument) 2 : exhibiting an often perverse and wearisome tendency to quarrels and disputes (a man of a most ~ nature) *syn* see **BELLIGERENT** — **con-ten-tious-ly** adv — **con-ten-tious-ness** n

con-tent-ment \kən-'tent-mənt\ n (15c) 1 : the quality or state of being contented 2 : something that contents

con-tent word \kən-'tent\ n (1940) : a word that primarily expresses lexical meaning — compare **FUNCTION WORD**

con-ter-mi-nous \kən-'tar-mə-nəs, kän-\ adj [L *conterminus*, fr. *com-* + *terminus* boundary — more at *TERM*] (1631) 1 : having a common boundary 2 : COTERMINOUS 3 : enclosed within one common boundary (the 48 ~ states) — **con-ter-mi-nous-ly** adv

con-test \kən-'test\, 'kän-\ vb [MF *contestier*, fr. L *contestari* (item) to bring an action at law, fr. *contestari* to call to witness, fr. *com-* + *testis* witness — more at *TESTAMENT*] vi (1603) : STRIVE, VIE ~ vt : to make

the subject of dispute, contention, or litigation; *esp* : **DISPUTE**, **CHALLENGE** — **con-test-able** \-'tes-tə-bəl\ adj — **con-test-er** n

con-test \kān-'test\ n (1647) 1 : a struggle for superiority or victory 2 : **COMPETITION** 2 : a competition in which each contestant performs without direct contact with or interference from his competitors

con-test-ant \kān-'tes-tənt\ also \kān-\ n (1665) 1 : one that participates in a contest 2 : one that contests an award or decision

con-tes-ta-tion \kān-'tes-tā-shən\ n (1580) : **CONTROVERSY**, **DEBATE**

con-text \kān-'tekst\ n [ME, weaving together of words, fr. L *contextus* connection of words, coherence, fr. *contextere* to weave together, fr. *com-* + *texere* to weave — more at *TECHNICAL*] (ca. 1568) 1 : the parts of a discourse that surround a word or passage and can throw light on its meaning 2 : the interrelated conditions in which something exists or occurs : **ENVIRONMENT**, **SETTING** — **con-text-less** \-'tekst-ləs\ adj — **con-text-u-al** \kān-'teks-chə-wəl, kān-, -chəl\ adj

— **con-text-u-ally** adv

con-text-free \kān-'tekst-'frē\ adj (1964) : of, relating to, or being a grammar or language based on rules that describe a change in a string without reference to elements outside of the string; *also* : being such a rule

con-text-tu-al-ize \kān-'teks-chə-wə-liz, -chə-liz\ vt -ized; -iz-ing (1934) : to place (as a word or activity) in a context

con-text-ture \kān-'teks-chər, 'kān-\ n [F, fr. L *contextus*, pp. of *contextere*] (1603) 1 : the act, process, or manner of weaving parts into a whole; *also* : a structure so formed (as a ~ of lies) 2 : **CONTEXT**

con-tigu-i-ty \kān-tō-'gyü-ə-tē\ n, pl -ties (1612) : the quality or state of being contiguous : **PROXIMITY**

con-tigu-ous \kān-'ti-gyō-wəs\ adj [L *contiguus*, fr. *contingere* to have contact with — more at *CONTINGENT*] (ca. 1609) 1 : being in actual contact : touching along a boundary or at a point 2 of angles : **ADJACENT** 2 : next or near in time or sequence 4 : touching or connected throughout in an unbroken sequence (as row houses) *syn* see **ADJACENT** — **con-tig-u-ous-ly** adv — **con-tig-u-ous-ness** n

con-ti-nence \kān-'tē-nəns\ n (14c) 1 : **SELF-RESTRAINT**; *esp* : a refraining from sexual intercourse 2 : the ability to retain bodily discharge voluntarily (as fecal ~)

con-ti-nent \kān-'tē-nənt\ adj [ME, fr. MF, fr. L *continent-*, *continens*, fr. pp. of *continere* to hold in — more at *CONTAIN*] (14c) 1 : exercising continence 2 obs : **RESTRICTIVE** — **con-ti-nent-ly** adv

con-ti-nent \kān-'tē-nənt\ also \kānt-nənt\, 'kānt-nənt\ n [in senses 1 & 2, fr. L *continent-*, *continens*, pp. of *continere*, to hold together, contain; in senses 3 & 4, fr. L *continent-*, *continens* continuous mass of land, mainland, fr. *continent-*, *continens*, pp. of *continere*] (1541) 1 *archaic* : CONTAINER, **CONTINENT** 2 *archaic* : EPITOME 3 : MAINLAND 4 a : one of the six or seven great divisions of land on the globe b cap : the continent of Europe — used with the

con-ti-nen-tal \kān-'tē-nēn-təl\ adj (1760) 1 a : of, relating to, or characteristic of a continent (as waters); *specif*, often cap : of or relating to the continent of Europe excluding the British Isles b often cap : of, relating to, or being a cuisine derived from the classic dishes of Europe and esp. France 2 a often cap : of or relating to the colonies later forming the U.S. (Continental Congress) b : being the part of the U.S. on the No. American continent; *also* : being the part of the U.S. comprising the lower 48 states — **con-ti-nen-tal-ly** \-'tē-lē\ adv

continental n (1777) 1 a often cap : an American soldier of the Revolution in the Continental army b (1) : a piece of Continental paper currency (2) : the least bit (not worth a ~) 2 : an inhabitant of a continent and esp. the continent of Europe

continental breakfast n, often cap C (1911) : a light breakfast (as of rolls or toast and coffee)

continental drift n (1926) : a hypothetical slow movement of the continents on a deep-seated viscous zone within the earth — compare **PLATE TECTONICS**

continental shelf n (1892) : a shallow submarine plain of varying width forming a border to a continent and typically ending in a steep slope to the oceanic abyss

continental slope n (1900) : the usu. steep slope from a continental shelf to the ocean floor

con-tin-gence \kān-'tin-jəns\ n (ca. 1530) 1 : **CONTINGENCY** 2 :

TANGENCY **con-tin-gen-cy** \kān-'tin-jən(t)-sē\ n, pl -cies (1561) 1 : the quality or state of being contingent 2 : a contingent event or condition: as a : an event (as an emergency) that may but is not certain to occur (trying to provide for every ~) b : something liable to happen as an adjunct to or result of something else *syn* see **JUNCTURE**

contingency fee n (1945) : a fee for services (as of a lawyer) paid upon successful completion of the services and usu. calculated as a percentage of the gain realized for the client — called also **contingent fee**

contingency table n (ca. 1947) : a table of data in which the row entries tabulate the data according to one variable and the column entries tabulate it according to another variable and which is used esp. in the study of the correlation between variables

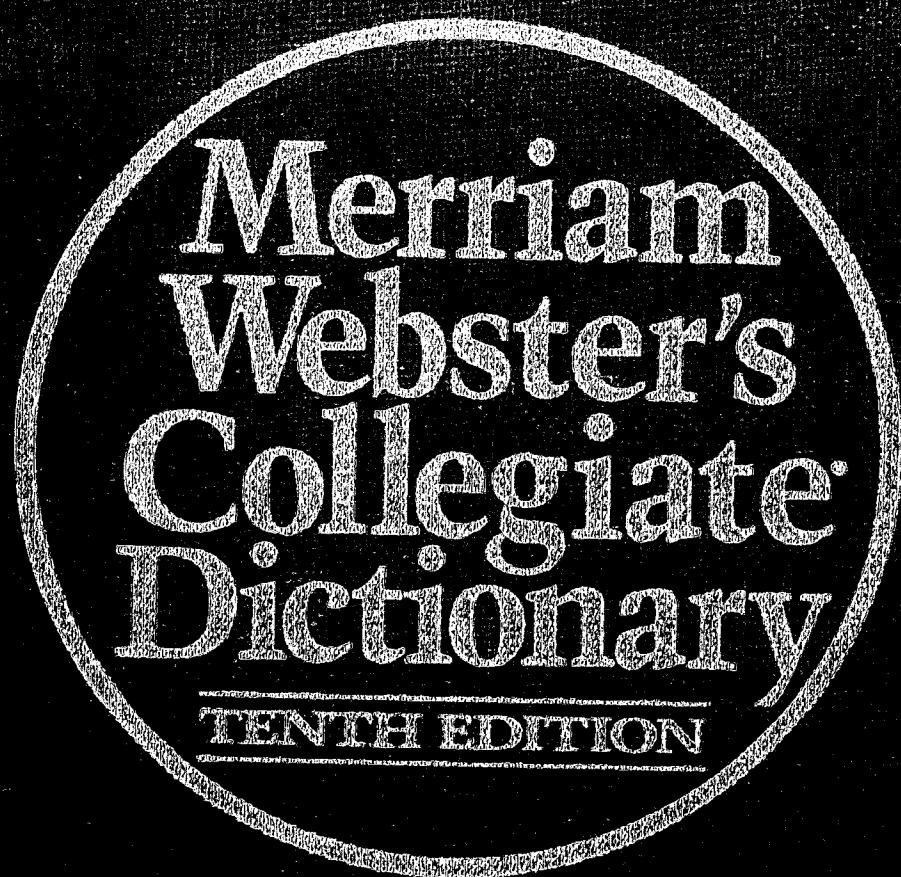
con-tin-gent \kān-'tin-jənt\ adj [ME, fr. L *contingent-*, *continens*, pp. of *continere* to have contact with, befall, fr. *com-* + *tangere* to touch — more at *TANGENT*] (14c) 1 : likely but not certain to happen : **POSSIBLE** 2 : not logically necessary; *esp* : **EMPIRICAL** 3 a : happening by chance or unforeseen causes b : subject to chance or unseen effects : **UNPREDICTABLE** c : intended for use in circumstances not completely foreseen 4 : dependent on or conditioned by something else 5 : not necessitated : determined by free choice *syn* see **ACCIDENTAL** — **con-tin-gent-ly** adv

contingent n (1548) 1 : something contingent : **CONTINGENCY** 2 : a representative group : **DELEGATION**, **DETACHMENT**

con-tin-u-al \kān-'tin-yü-əl, -yəl\ adj [ME, fr. L *continuus* continuous] (14c) 1 : continuing indefinitely in time without interruption (~ fear) 2 : recurring in steady usu. rapid succession (as a history of invasions) — **con-tin-u-ally** adv

syn **CONTINUAL**, **CONTINUOUS**, **CONSTANT**, **PERPETUAL**, **PERENNIAL** mean characterized by continued occurrence or recurrence. **CONTINUAL** often implies a close prolonged succession or recurrence (continual showers the whole weekend). **CONTINUOUS** usu. implies an uninterrupted flow or spatial extension (football's oldest continuous rivalry). **CONSTANT** implies uniform or persistent occurrence or recurrence (lived in *constant* pain). **INCESSANT** implies ceaseless or uninterrupted

EXHIBIT L-13(b)





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Library of Congress Cataloging in Publication Data
Main entry under title:

Merriam-Webster's collegiate dictionary. — 10th ed.

p. cm.

ISBN 0-87779-708-0 (unindexed). — ISBN 0-87779-709-9 (indexed).
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1. English language—Dictionaries.

PE1628.M36 1994

423—dc20

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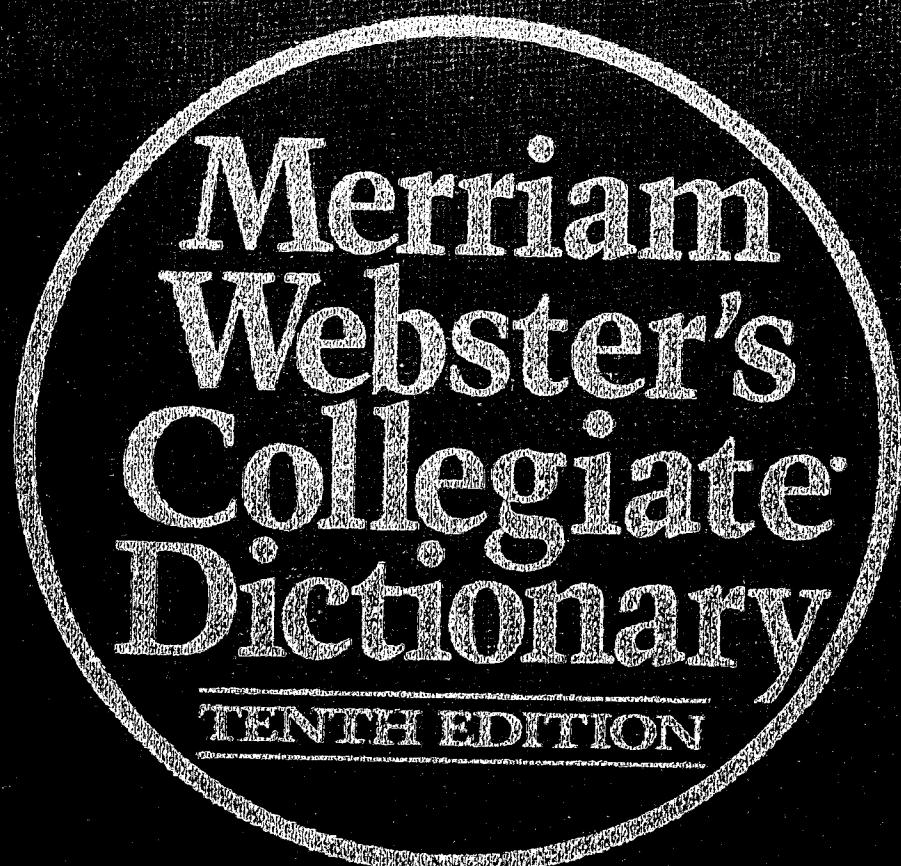
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920 premier • preposterous

pre-mier \pri-'mir, -'myir, -'mē-ər; 'prē-, 'pre-\ adj [ME *primier*, fr. MF *premier* first, chief, fr. L *primarius* of the first rank — more at PRIMARY] (15c) 1: first in position, rank, or importance 2: first in time : EARLIEST

premier n [F, fr. *premier*, adj.] (1711) : PRIME MINISTER — **pre-mier-ship** \-ship\ n

pre-mier dan-seur \prē-myā-dān-sör\ n [F] (1828) : the principal male dancer in a ballet company

pre-miere \prē-myēr, -'mir, -'mē-ər; .pri-mē-'er\ adj [alter. of 'premier'] (1768) : PREMIER

premiere also **pre-mière** same as 'PREMIERE' n [F *première*, fr. fem. of *premier* first] (1889) 1: a first performance or exhibition (the ~ of a play) 2: the chief actress of a theatrical cast

premiere also **pre-mière** or **pre-mier** same as 'PREMIERE' vb **premiered** also **pre-miered**; **pre-miering** also **pre-mier-ing** vi (1933) : to give a first public performance of ~ vi 1: to have a first public performance 2: to appear for the first time as a star performer

pre-mière dan-seuse \prē-myēr-dān-süz\ n [F] (1828) : PRIMA BALLERINA

pre-mil-le-nar-i-an-ism \prē-mi-lē-när-ē-ə-ni-zäm\ n (1844) : PREMILLENNIALISM — **pre-mil-le-nar-i-an** \-ē-ən\ adj or n

pre-mil-len-ni-al \prē-mä-'le-nē-əl\ adj (1846) 1: coming before a millennium 2: holding or relating to premillennialism — **pre-mil-len-ni-al-ly** \-nē-ə-lē\ adv

pre-mil-len-ni-al-ism \-nē-ə-lē-zäm\ n (ca. 1883) : the view that Christ's return will usher in a future millennium of Messianic rule mentioned in Revelation — **pre-mil-len-ni-al-ist** \-nē-ə-list\ n

pre-mise also **pre-miss** \prē-mäz\ n [in sense 1, fr. ME *premissa*, fr. MF, fr. ML *praemissa*, fr. L, fem. of *praemissus*, pp. of *praemittere* to place ahead, fr. *prae-* + *mittere* to send; in other senses, fr. ME *premisses*, fr. ML *praemissa*, fr. L, neut. pl. of *praemissus*] (14c) 1 a: a proposition antecedently supposed or proved as a basis of argument or inference; *specif*: either of the first two propositions of a syllogism from which the conclusion is drawn b: something assumed or taken for granted : PRESUPPOSITION 2 pl: matters previously stated; *specif*: the preliminary and explanatory part of a deed or of a bill in equity 3 pl [fr. its being identified in the premises of the deed] a: a tract of land with the buildings thereon b: a building or part of a building usu. with its appurtenances (as grounds)

pre-mise \'prē-mäz also pri-'miz\ vi **pre-mised**; **pre-mising** (1526) 1 a: to set forth beforehand as an introduction or a postulate b: to offer as a premise in an argument 2: POSTULATE 3: to base on certain assumptions

pre-mi-um \'prē-mē-əm\ n [L *praemium* booty, profit, reward, fr. *prae-* + *emere* to take, buy — more at REDEEM] (1601) 1 a: a reward or recompense for a particular act b: a sum over and above a regular price paid chiefly as an inducement or incentive c: a sum in advance of or in addition to the nominal value of something (bonds callable at a ~ of six percent) d: something given free or at a reduced price with the purchase of a product or service 2: the consideration paid for a contract of insurance 3: a high value or a value in excess of that normally or usu. expected (put a ~ on accuracy)

premium adj (1844) : of exceptional quality or amount; also: higher-priced

pre-mix \(),prē-'miks, 'prē-\, vt (1927) : to mix before use

pre-mix \'prē-,miks\ n (1937) : a mixture of ingredients designed to be mixed with other ingredients before use

pre-mo-lar \(),prē-'mō-lär\ adj (ca. 1859) : situated in front of or preceding the molar teeth; esp: being or relating to those teeth of a mammal in front of the true molars and behind the canines when the latter are present — **premolar** n

pre-mon-ish \-'mä-nish\ vt (1526) *archaic* : FOREWARN ~ vi, *archaic* : to give warning in advance

pre-mo-ni-tion \prē-mä-'ni-shän, .prē-\ n [ME, fr. MF, fr. LL *praemonition*, *praemonitio*, fr. L *praemonere* to warn in advance, fr. *prae-* + *monere* to warn — more at MIND] (15c) 1: previous notice or warning : FOREWARNING 2: anticipation of an event without conscious reason : PRESENTIMENT

pre-mon-i-to-ry \pri-'mä-nä-,tōr-ē, -tōr-\ adj (1647) : giving warning (a ~ symptom) — **pre-mon-i-to-ri-ly** \-mä-nä-,tōr-ə-lē, -tōr-\ adv

Pre-mon-stra-ten-sian \prē-mä-nä(n)-stra-tēn(t)-shän\ n [ML *praemonstratensis*, fr. *praemonstratus* of Prémontré, fr. *Præmonstratus* Prémontré] (1695) : a member of an order of canons regular founded by St. Norbert at Prémontré near Laon, France, in 1120

pre-mu-ne \(),prē-'myün\ adj [back-formation fr. *premunition*] (1948) : exhibiting premunition

pre-mu-ni-tion \prē-myü-'ni-shän\ n [L *praemunition*, *praemunitio* advance fortification, fr. *praemunire* to fortify in advance, fr. *prae-* + *munire* to fortify — more at MUNITION] (1607) 1 *archaic* : an advance provision of protection 2 a: resistance to a disease due to the existence of its causative agent in a state of physiological equilibrium in the host b: immunity to a particular infection due to previous presence of the causative agent

pre-name \prē-näm\ n (1894) : FORENAME

pre-na-tal \(),prē-'nä-täl\ adj (1826) 1: occurring, existing, or performed before birth (a ~ care) (the ~ period) 2: providing or receiving prenatal medical care (a ~ clinic) (a ~ patients) — **pre-na-tal-ly** \-täl-ē\ adv

pre-nom-i-nate \(),prē-'nä-mä-nät\ adj [LL *praenominatus*, pp. of *praenominare* to name before, fr. L *prae-* + *nominare* to name — more at NOMINATE] (1513) *obs*: previously mentioned

pre-nom-i-nate \-,nät\ vt (1547) *obs*: to mention previously — **pre-nom-i-na-tion** \(),prē-,nä-mä-'nä-shän\ n, *obs*

pre-no-tion \(),prē-'nō-shän, 'prē-\ n [L *praenotion*, *praenotio* preconception, fr. *prae-* + *notio* idea, conception — more at NOTION] (1588) 1: PRESENTIMENT, PREMONITION 2: PRECONCEPTION

pre-pon-tice \prē-pən-tsë\ n [ME *prentis*, short for *apprentis*] (14c) : APPRENTICE 1, LEARNER — **prentice** adj

prentice vt **prenticed**; **prentic-ing** (1598) : APPRENTICE

pre-nup-tial \(),prē-'nup-shäl, -chäl, -chä-wäl\ adj (1869) : made or occurring before marriage (a ~ agreement)

pre-oc-cu-pancy \(),prē-'ä-kyä-päñ(t)-së\ n (ca. 1755) 1: an act or the right of taking possession before another 2: the condition of being completely busied or preoccupied

pre-oc-cu-pa-tion \(),prē-'ä-kyä-'pä-shän\ n (1603) 1: an act of preoccupying : the state of being preoccupied 2 a: extreme or excessive concern with something b: something that preoccupies one

pre-oc-cu-pied \(),prē-'ä-kyä-'päid\ adj (1842) 1: previously applied to another group and unavailable for use in a new sense — used of a biological generic or specific name 2 a: lost in thought; also: absorbed in some preoccupation b: already occupied

pre-oc-cu-py \-päi\ vt [L *praecuppare*, lit., to seize in advance, fr. *prae-* + *cuppare* to seize, occupy] (1567) 1: to engage or engross the interest or attention of beforehand or preferentially 2: to take possession of or fill beforehand or before another

pre-oper-a-tive \(),prē-'ä-pər-ä-tiv\ adj (1904) : occurring before a surgical operation — **pre-oper-a-tive-ly** adv

pre-or-dain \(),prē-'ör-'dän\ vt (1533) : to decree or ordain in advance

pre-ordain \(),prē-'ör-däin\ n — **pre-or-di-na-tion** \(),prē-'ör-d'n-'ä-shän\ n

pre-ovu-la-to-ry \(),prē-'äv-yä-lä-,tōr-ē, -tōr, -'öv-\ adj (1935) : occurring or existing in or typical of the period immediately preceding ovulation (a ~ of oocytes) (a ~ surge of luteinizing hormone)

pre-owned \(),prē-'önd, 'prē-\ adj (1964) : SECONDHAND

prep \',prēp\ n (1862) 1: PREPARATION 2: PREPARATORY SCHOOL 3: a preliminary trial for a racehorse

prep vb **prepped**; **prep-ping** vi (1915) 1: to attend preparatory school 2 [short for *prepare*] : to get ready ~ vi : PREPARE: esp: to prepare for operation or examination

pre-pack-age \(),prē-'ä-pä-kij\ vt (1945) : to package (as food or a manufactured article) before offering for sale to the consumer

prep-a-ra-tion \(),prē-'ä-pä-'rä-shän\ n [ME *preparation*, fr. MF *preparation*, fr. L *praeparatio*, *praeparatio*, fr. *praeparare* to prepare] (14c) 1: the action or process of making something ready for use or service or of getting ready for some occasion, test, or duty 2: a state of being prepared : READINESS 3: a preparatory act or measure 4: something that is prepared; *specif*: a medicinal substance made ready for use (a ~ for colds)

pre-par-a-tive \(),prē-'ä-par-ä-tiv\ n (14c) : something that prepares the way for or serves as a preliminary to something else : PREPARATION

preparative adj (ca. 1530) : PREPARATORY — **pre-par-a-tive-ly** adv

pre-par-a-tor \(),prē-'ä-par-ä-tor\ n (1762) : one that prepares; *specif*: a person who prepares scientific specimens or museum displays

pre-par-a-to-ry \(),prē-'ä-par-ä-tör\ adj (15c) : preparing or serving to prepare for something : INTRODUCTORY — **pre-par-a-to-ri-ly** \(),prē-'ä-par-ä-tör-ē, -tōr- also ,pre-p(ə)-rä-\ adv

preparatory school n (1822) 1: a usu. private school preparing students primarily for college 2 *Brit*: a private elementary school preparing students primarily for British public schools

preparatory to prep (1649) : in preparation for

pre-para \(),prē-'ä-par\, -'ä-par\ vb **prepared**; **pre-par-ing** [ME, fr. MF *parer*, fr. L *parpare*, fr. *praे-* + *parere* to procure, prepare — more at PARE] vt (15c) 1 a: to make ready beforehand for some purpose, use, or activity (a ~ food for dinner) b: to put in a proper state of mind (is *prepared* to listen) 2: to work out the details of: plan in advance (preparing strategy for the coming campaign) 3 a: to put together : COMPOUND (a ~ a prescription) b: to put into written form (a ~ report) ~ vi : to get ready (preparing for a career) — **pre-par-er** n

prepared adj (1663) : subjected to a special process or treatment — **pre-pared-ly** \-,pärd-ē, -'per-ē, -'per-\ adv

pre-pared-ness \pri-'par-äd-näs, -per- also ,pärd-näs or -'perd-näs\ n (1590) : the quality or state of being prepared; *esp*: a state of adequate preparation in case of war

pre-pay \(),prē-'päi\ vt -paid\, -pay-ing (1839) : to pay or pay the charge on in advance — **pre-pa-ment** \-,pä-mänt\ n

pre-pense \(),prē-'päñ(t)s\ adj [by shortening & alter. fr. earlier *purspend*, fr. ME, pp. of *purspense* to deliberate, premeditate, fr. MF *purpenser*, fr. OF, fr. *pur* for + *penser* to think — more at PURCHASE, PENSIVE] (1702) : planned, beforehand : PREMEDITATED — usu. used postpositively (malice ~) — **pre-pense-ly** adv

pre-plant \(),prē-'plänt\, 'prē-\ also **pre-plant-ing** \-,plän-tin\ adj (1961) : occurring or used before planting a crop (a ~ soil fertilization)

pre-pon-der-ance \(),prē-'pän-d(ə)-räñ(t)s\ n (1681) 1: a superiority in weight, power, importance, or strength 2 a: a superiority or excess in number or quantity b: MAJORITY

pre-pon-der-an-cy \-,pän(t)-së\ n (1646) : PREPONDERANCE

pre-pon-der-ant \(),prē-'pän-d(ə)-räñ(t)\ adj (15c) 1: having superior weight, force, or influence 2: having greater prevalence *syn* see DOMINANT — **pre-pon-der-ant-ly** adv

pre-pon-der-ate \(),prē-'pän-dä-rät\ vt -at-ed\, -at-ing [L *praeponderatus*, pp. of *praeponderare*, fr. *praē-* + *ponder*, *pondus* weight — more at PENDANT] vi (1623) 1: to exceed in weight 2: to exceed in influence, power, or importance 3: to exceed in numbers ~ vi 1 *archaic*: OUTWEIGH 2 *archaic*: to weigh down — **pre-pon-der-a-tion** \-,pän-dä-'rä-shän, 'prē-\ n

pre-pon-der-ate \-,pän-dä-rät\ adj (1802) : PREPONDERANT — **pre-pon-der-ately** adv

pre-posi-tion \(),prē-'pä-'zï-shän\ n [ME *preposicioun*, fr. L *praepositione*, fr. *praeponere* to put in front, fr. *praē-* + *ponere* to put — more at POSITION] (14c): a function word that typically combines with a noun phrase to form a phrase which usu. expresses a modification or predication — **pre-posi-tion-al** \-,zish-näl, -'zï-shä-näl\ adj — **pre-pon-si-tion-ally** adv

pre-posi-tive \(),prē-'pä-zä-tiv, -'päz-tiv\ adj [LL *praepositivus*, fr. L *praepositus*, pp. of *praeponere*] (1583) : put before : PREFIXED — **pre-pon-si-tive-ly** adv

pre-possess \(),prē-'pä-'zës also -'ses\ vt (1614) 1 *obs*: to take previous possession of 2: to cause to be preoccupied 3: to influence beforehand esp. favorably

pre-possess-ing adj (1642) 1 *archaic*: creating prejudice 2: tending to create a favorable impression : ATTRACTIVE

pre-pos-ses-sion \(),prē-'pä-'ze-shän also -'se-\ n (1648) 1 *archaic*: prior possession 2: an attitude, belief, or impression formed beforehand : PREJUDICE 3: an exclusive concern with one idea or object : PREOCUPATION *syn* see PREDILECTION

pre-pos-ter-ous \(),prē-'päz-təs\ adj [L *praeposterus*, lit., in the wrong order, fr. *praē-* + *posterus* hinder, following — more at POSTERIOR]

EXHIBIT L-14

Ex. L-14
LGD US PATENT NO. 6,803,984

INDEX OF DISPUTED TERMS

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a second substrate	8
on a single production process line	1
passing the first and second substrates through a sealing material coating portion of the single production process line in serial order	8
a sealing material coating portion of the single production process line	1
in serial order	1
passing the first and second substrates through a liquid crystal dispensing portion of the single production process line in serial order	8
a liquid crystal dispensing portion of the single production process line	13
a pixel region	13
the liquid crystal is dispensed onto the first substrate at the same time that the second substrate is disposed in the sealing material coating portion	16
in serial order in a same cleaning unit	16

EXHIBIT L-14
U.S. PATENT NO. 6,803,984
TERMS IN DISPUTE

ASSERTED CLAIM 1

1. A method for manufacturing a liquid crystal display device, comprising the steps of:
 providing at least a first substrate and a second substrate **on a single production process line;**
 passing the first and second substrates through **a sealing material coating portion of the single production process line in serial order**, a sealing material being coated on the second substrate with the first substrate being passed through the sealing material coating portion without forming a sealing material thereon;

~

passing the first and the second substrates through a liquid crystal dispensing portion of the single production process line **in serial order**, liquid crystal being dispensed onto a pixel region of one of the first and second substrates with the other one of the first and second substrates being passed through the liquid crystal dispensing portion without dispensing liquid crystal thereon; and

assembling the first substrate with the second substrate to form a liquid crystal panel of at least one liquid crystal display device.

LGD's Claim Construction

on a single production process line – on a production line where the processing equipment is arranged along a common path for performing the liquid crystal cell processes

a sealing material coating portion of the single production process line¹ – a portion of the single production process line where the sealing material is selectively applied

in serial order – one after the other

assembling² – bringing together

¹ Disputed Term “sealing material coating portion in a single production process line” also appears in asserted claims 2, 3, and 5 in the same context.

² Disputed Term “assembling” also appears in asserted claim 10 in the same context.

INTRINSIC EVIDENCE FOR DISPUTED TERM “ON A SINGLE PRODUCTION PROCESS LINE”:

curing step (10S). That is, two production lines are used so that the TFT substrate and the CF substrate respectively pass through the orientation step (1S), the cleaning step (2S), the sealing material coating step (3S), the silver dotting step (5S), and the liquid crystal dropping step (6S) in parallel production lines. The use of two production lines results in poor spatial efficiency, higher costs caused by two sets of expensive equipment, and efficiency losses due to different processing times between the two production lines (i.e., line unbalance). Moreover, an inoperative state of one production line caused by failure of the other line reduces productivity substantially.

3:31-42

The TFT substrate and the color filter substrate are alternately provided into a production line having a single line structure for progressing the liquid crystal cell process. Processing equipment can be considered as equipment for the TFT substrate, equipment for the color filter substrate or both. The respective substrates are preferably provided to and processed by the corresponding equipment automatically in accordance with information on the substrates.

5:23-30

As has been explained, the method for manufacturing a liquid crystal display in accordance with the present invention can improve spatial efficiency by adopting a single production line for the liquid crystal cell process, increase the productivity by providing an effective and simple liquid crystal cell process, and can overcome problems caused by a process time difference between the TFT substrate process line and the color filter substrate line. Here, management of

7:34-41

The TFT substrate and the color filter substrate are alternately provided into a production line having a single line structure for progressing the liquid crystal cell process. Processing equipment can be considered as equipment for the TFT substrate, equipment for the color filter substrate or both. The respective substrates are preferably provided to and processed by the corresponding equipment automatically in accordance with information on the substrates.

5:23-30

EXTRINSIC EVIDENCE FOR DISPUTED TERM “ON A SINGLE PRODUCTION PROCESS LINE”:

line \lin\ n. often attrib [ME; partly fr. OF *ligne*, fr. L *linea*, fr. fem. of *lineus* made of flax, fr. *linum* flax; partly fr. OE *line*; akin to OE *lin* flax — more at **LINEN**] (bef. 12c) 1 a : THREAD, STRING, CORD, ROPE: as (1) : a comparatively strong slender cord (2) : CLOTHESLINE (3) : a rope used on shipboard b (1) : a device for catching fish consisting of a cord with hooks and other fishing gear (2) : scope for activity : ROPE c : a length of material used in measuring and leveling d : piping for conveying a fluid (as steam) e (1) : a wire or pair of wires connecting one telegraph or telephone station with another or a whole system of such wires; *also* : any circuit in an electronic communication system (2) : a telephone connection *(tried to get a ~)*; *also* : an individual telephone extension *(a call on ~ 2)* (3) : the principal circuits of an electric power system 2 a (1) : a horizontal row of written or printed characters; *also* : a blank row in lieu of such characters (2) : a unit in the rhythmic structure of verse formed by the grouping of a number of the smallest units of the rhythm (as metrical feet) (3) : an often numbered section of a computer program containing a single command or a small number of commands b : a short letter : NOTE c *pl* : a certificate of marriage d : the words making up a part in a drama — usu. used in *pl.* e : any of the successive horizontal rows of picture elements on the screen of a cathode-ray tube (as a television screen) 3 a : something (as a ridge or seam) that is distinct, elongated, and narrow b : a narrow crease (as on the face) : WRINKLE c : the course or direction of something in motion : ROUTE d (1) : a state of agreement or conformity : ACCORDANCE (2) : a state of order, control, or obedience *(you're getting out of ~)* e : a boundary of an area *(the state ~)* f : the track and roadbed of a railway g : an amount of cocaine that is arranged in a line to be inhaled through the nose 4 a : a course of conduct, action, or thought b : a field of

line – 6 j 1: “an arrangement of operations in manufacturing permitting sequential occurrence on various stages of production”

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cont'd on next page

EXTRINSIC EVIDENCE FOR DISPUTED TERM "ON A SINGLE PRODUCTION PROCESS LINE" (cont'd):

cont'd from previous page

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activity or interest **c** : a glib often persuasive way of talking **5** **a** : LIMIT, RESTRAINT **b** *archaic* : position in life : LOT **6** **a** (1) : FAMILY, LINEAGE (2) : a strain produced and maintained esp. by selective breeding or biological culture (3) : a chronological series **b** : dispositions made to cover extended military positions and presenting a front to the enemy — usu. used in pl. **c** : a military formation in which the different elements are abreast of each other **d** : naval ships arranged in a regular order **e** (1) : the combatant forces of an army distinguished from the staff corps and supply services (2) : the force of a regular navy **f** (1) : officers of the navy eligible for command at sea distinguished from officers of the staff (2) : officers of the army belonging to a combatant branch **g** : an arrangement or placement of persons or objects of one kind in an orderly series (a ~ of trees) (stand on ~) (waiting in ~); also : the persons or objects so positioned (the ~ moved slowly at the bank) **h** (1) : a group of public conveyances plying regularly under one management over a route (2) : a system of transportation together with its equipment, routes, and appurtenances; also : the company owning or operating it **i** : a succession of musical notes esp. considered in melodic phrases **j** (1) : an arrangement of operations in manufacturing permitting sequential occurrence on various stages of production (2) : the personnel of an organization that are responsible for its stated objective **k** (1) : the 7 players including center, 2 guards, 2 tackles, and 2 ends who in offensive football play line up on or within one foot of the line of scrimmage (2) : the players who in defensive play line up within one yard of the line of scrimmage **7** : a narrow elongated mark drawn or projected; as **a** (1) : a circle of latitude or longitude on a map (2) : EQUATOR **b** : a mark (as on a map) recording a boundary, division, or contour **c** : any of the horizontal parallel strokes on a music staff on or between which notes are placed — compare SPACE **d** : a mark (as by pencil) that forms part of the formal design of a picture distinguished from the shading or color **e** : a division on a bridge score dividing the score for bonuses from that for tricks **f** (1) : a demarcation of a limit with reference to which the playing of some game or sport is regulated — usu. used in combination (2) : a marked or imaginary line across a playing area (as a football field) parallel to the end line (3) : LINE OF SCRIMMAGE **8** : a straight or curved geometric element that is generated by a moving point and that has extension only along the path of the point : CURVE **9** **a** : a defining outline : CONTOUR **b** : a general plan : MODEL — usu. used in pl. **10** **a** *chiefly Brit* : PICA — used to indicate the size of large type **b** : the unit of fineness of halftones expressed as the number of screen lines to the linear inch **11** : merchandise or services of the same general class for sale or regularly available **12** **a** : a source of information : INSIGHT **b** : betting odds offered by a bookmaker esp. on a sporting event **13** : a complete game of 10 frames in bowling — called also *string* **14** : LINE DRIVE — **liny** also **lin-ey** \li-nē\ *adj* — **between the lines** **1** : by implication : in an indirect way **2** : by way of inference — **down the line** : all the way : FULLY — **in line for** : due or in a position to receive — **on line** : in or into operation — **on the line** **1** : in complete commitment and at great risk (puts his future *on the line* by backing that policy) **2** : on the border between two categories **3** : IMMEDIATELY (paid cash *on the line*)

Merriam-Webster Dictionary (1994) at 677

EX E

INTRINSIC EVIDENCE FOR DISPUTED TERM “A SEALING MATERIAL COATING PORTION OF THE SINGLE PRODUCTION PROCESS LINE”:

After the TFT substrate and the color filter substrate that have passed through the orientation step are cleaned (25S), a sealing material is coated onto the color filter substrate, without providing an hole structure for liquid crystal injection so that the color filter substrate can later be assembled with the TFT substrate on a periphery of a pixel region with a fixed gap between the TFT substrate and the color filter substrate (26S). In contrast, the TFT substrate passes through the sealing material coating step (26S) without coating the sealing material and is provided into the next step.

5:40-50

0 Next, a sealing material is coated on the color filter substrate without providing the liquid crystal filling hole so that the color filter substrate may later be assembled with the TFT substrate on a periphery of a pixel region with a fixed gap between the TFT substrate and the color filter substrate (41S). Here, the TFT substrate passes through the sealing material coating step (41S) without coating the sealing material thereon and is provided into the next step.

6:27-34

Again, it should be recognized that the present invention is not limited to this arrangement. For example, the coating of the sealing material and the dropping of the liquid crystal may be carried out on either of the TFT substrate or the color filter substrate. The silver dot coating step may be omitted

6:41-46

Next, a sealing material is coated on the color filter substrate without providing a liquid crystal filling hole so that the color filter substrate may later be assembled with the TFT substrate on a periphery of a pixel region with a fixed gap between the TFT substrate and the color filter substrate (52S). However, the TFT substrate passes through the sealing material coating step (52S) without coating the sealing material thereon and is provided into the next step.

7:01-08

INTRINSIC EVIDENCE FOR DISPUTED TERM “IN SERIAL ORDER”:

After the TFT substrate and the color filter substrate that have passed through the orientation step are cleaned (25S), a sealing material is coated onto the color filter substrate, without providing an hole structure for liquid crystal injection so that the color filter substrate can later be assembled with the TFT substrate on a periphery of a pixel region with a fixed gap between the TFT substrate and the color filter substrate (26S). In contrast, the TFT substrate passes through the sealing material coating step (26S) without coating the sealing material and is provided into the next step.

5:40-50

Also, it should be recognized that a particular step may be performed on one substrate at the same time that a different step is performed on the other substrate. That is, the production process line receives many thin film transistor substrates and color filter substrates in serial order. Each pair of substrates will pass through each component of the production process line. However, both substrates of each pair need not be disposed in the same component of the production process line at the same time. Thus, one substrate of the pair may be operated on by one component of the production process line at the same time that the other substrate of the pair is being operated on by another component.

7:21-34

EXTRINSIC EVIDENCE FOR DISPUTED TERM “IN SERIAL ORDER”:

raw edges of a piece of fabric (as a carpet) to prevent raveling
1 **se·ri·al** \sir-ē-əl\ *adj* (1840) 1 : of, relating to, consisting of, or arranged in a series, rank, or row (as order) 2 : appearing in successive parts or numbers (as a story) 3 : belonging to a series maturing periodically rather than on a single date (as bonds) 4 : of, relating to, or being music based on a series of tones in a chosen pattern without regard for traditional tonality 5 **a** : effecting a series of similar acts over a period of time (as a killer) **b** : occurring in such a series (as a murder) 6 : relating to or being a connection in a computer system in which the bits of a byte are transmitted sequentially over a single wire — compare PARALLEL — **se·ri·al·ly** \-ə-lē\ *adv*
2 **se·ri·al** \sir-ē-əl\ *n* (1846) 1

Merriam-Webster Dictionary, 1994

INTRINSIC EVIDENCE FOR DISPUTED TERM “ASSEMBLING”:

A liquid crystal cell process is a process of assembling the TFT substrate and the CF substrate prepared by the array process and the color filter process, respectively. Generally,

1:57-59

After the TFT substrate and the color filter substrate that have passed through the orientation step are cleaned (25S), a sealing material is coated onto the color filter substrate, without providing an hole structure for liquid crystal injection so that the color filter substrate can later be assembled with the TFT substrate on a periphery of a pixel region with a fixed gap between the TFT substrate and the color filter substrate (26S). In contrast, the TFT substrate passes through the sealing material coating step (26S) without coating the sealing material and is provided into the next step.

5:43-45

EXTRINSIC EVIDENCE FOR DISPUTED TERM “ASSEMBLING”:

as·sem·ble \ə-'sem-bəl\ **vb** **as·sem·bled**; **as·sem·bling** \ə-b(ə-)lin\ [ME, fr. OF *assembler*, fr. (assumed) VL *assimulare*, fr. L *ad-* + *simul* together — more at **SAME**] **vi** (13c) **1** : to bring together (as in a particular place or for a particular purpose) **2** : to fit together the parts of **~ vi** : to meet together : **CONVENE** **syn** see **GATHER**

Merriam-Webster Disctionary (1994)

EXHIBIT E
U.S. PATENT NO. 6,803,984
TERMS IN DISPUTE

ASSERTED CLAIM 1

1. A method for manufacturing a liquid crystal display device, comprising the steps of:

providing at least a **first substrate** and a **second substrate** on a single production process line;

passing the first and second substrates through a sealing material coating portion of the single production process line in serial order, a sealing material being coated on the second substrate with the first substrate being passed through the sealing material coating portion without forming a sealing material thereon;

~

passing the first and the second substrates through a liquid crystal dispensing portion of the single production process line in serial order, liquid crystal being dispensed onto a pixel region of one of the first and second substrates with the other one of the first and second substrates being passed through the liquid crystal dispensing portion without dispensing liquid crystal thereon; and

assembling the **first substrate** with the **second substrate** to form a liquid crystal panel of at least one liquid crystal display device.

LGD's Claim Construction

a first substrate – one of a TFT or color filter substrate

a second substrate – the other of the TFT or color filter substrate

passing the first and second substrate through a sealing material coating portion of the single production process

line in serial order – passing the first and second substrates, one after the other, along a portion of the single production process line where the sealing material is selectively applied

passing the first and second substrates through a liquid crystal dispensing portion of the single production process line in serial order – passing the first and second substrates, one after the other, along a portion of the single production process line where liquid crystal is selectively dispensed

1 Disputed Term “Sealing material coating portion in a single production process line” also appears in asserted claims 2,3, and 5 in the same context.

2 Disputed Term “assembling” also appears in asserted claim 10 in the same context.

INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST SUBSTRATE” AND “A SECOND SUBSTRATE”:

Next, a step for dropping the liquid crystal onto the TFT substrate in a region corresponding to an area inside the sealing material coated on the color filter substrate is carried out (28S). Here, the color filter substrate passes through the liquid crystal dropping step (28S) without having the liquid crystal dropped thereon, and is provided into the next step.

Of course, it should be recognized that the present invention is not limited to this arrangement. For example, the coating of the sealing material, and the dropping of the liquid crystal material may carried out on either of the TFT substrate or the color filter substrate. The silver dot coating step may be omitted for the production of an IPS (In-Plane

5:63-66

Again, it should be recognized that the present invention is not limited to the above arrangement. For example, the coating of the sealing material and the dropping of the liquid crystal may be carried out on either of the TFT substrate or the color filter substrate. The silver dot coating step may be omitted for the production of an IPS mode LCD in which the pixel electrode and the common electrode are formed on a single TFT substrate.

7:10-13

INTRINSIC EVIDENCE FOR DISPUTED TERMS “PASSING THE FIRST AND SECOND SUBSTRATES THROUGH SEALING MATERIAL COATING PORTION OF THE SINGLE PRODUCTION PROCESS LINE IN SERIAL ORDER”:

The TFT substrate and the color filter substrate are alternately provided into a production line having a single line structure for progressing the liquid crystal cell process. Processing equipment can be considered as equipment for the TFT substrate, equipment for the color filter substrate or both. The respective substrates are preferably provided to and processed by the corresponding equipment automatically in accordance with information on the substrates.

5:23--30

After the TFT substrate and the color filter substrate that have passed through the orientation step are cleaned (25S), a sealing material is coated onto the color filter substrate, without providing an hole structure for liquid crystal injection so that the color filter substrate can later be assembled with the TFT substrate on a periphery of a pixel region with a fixed gap between the TFT substrate and the color filter substrate (26S). In contrast, the TFT substrate passes through the sealing material coating step (26S) without coating the sealing material and is provided into the next step.

5:40-50

0 Next, a sealing material is coated on the color filter substrate without providing the liquid crystal filling hole so that the color filter substrate may later be assembled with the TFT substrate on a periphery of a pixel region with a fixed gap between the TFT substrate and the color filter substrate (41S). Here, the TFT substrate passes through the sealing material coating step (41S) without coating the sealing material thereon and is provided into the next step.

6:27-34

Again, it should be recognized that the present invention is not limited to this arrangement. For example, the coating of the sealing material and the dropping of the liquid crystal may be carried out on either of the TFT substrate or the color filter substrate. The silver dot coating step may be omitted

6:41-46

Next, a sealing material is coated on the color filter substrate without providing a liquid crystal filling hole so that the color filter substrate may later be assembled with the TFT substrate on a periphery of a pixel region with a fixed gap between the TFT substrate and the color filter substrate (52S). However, the TFT substrate passes through the sealing material coating step (52S) without coating the sealing material thereon and is provided into the next step.

7:01-08

EXTRINSIC EVIDENCE FOR DISPUTED TERMS “PASSING THE FIRST AND SECOND SUBSTRATES THROUGH SEALING MATERIAL COATING PORTION OF THE SINGLE PRODUCTION PROCESS LINE IN SERIAL ORDER”:

portion \pōr-shən, 'pōr-\ n [ME, fr. OF, fr. L *portion-*, *portio*; akin to L *part-*, *par* part] (14c) 1 : an individual's part or share of something: as a : a share received by gift or inheritance b : DOWRY c : a helping of food 2 : an individual's lot, fate, or fortune : one's share of good and evil 3 : an often limited part set off or abstracted from a whole <give but that ~ which yourself proposed —Shak.> *syn* see PART, FATE

Merriam-Webster Dictionary, 1994

INTRINSIC EVIDENCE FOR DISPUTED TERMS “PASSING THE FIRST AND SECOND SUBSTRATES THROUGH A LIQUID CRYSTAL DISPENSING PORTION OF THE SINGLE PRODUCTION PROCESS LINE IN SERIAL ORDER” (cont’d):

The TFT substrate and the color filter substrate are alternately provided into a production line having a single line structure for progressing the liquid crystal cell process. Processing equipment can be considered as equipment for the TFT substrate, equipment for the color filter substrate or both. The respective substrates are preferably provided to and processed by the corresponding equipment automatically in accordance with information on the substrates.

5:23-30

Next, a step for dropping the liquid crystal onto the TFT substrate in a region corresponding to an area inside the sealing material coated on the color filter substrate is carried out (28S). Here, the color filter substrate passes through the liquid crystal dropping step (28S) without having the liquid crystal dropped thereon, and is provided into the next step.

Of course, it should be recognized that the present invention is not limited to this arrangement. For example, the coating of the sealing material, and the dropping of the liquid crystal material may be carried out on either of the TFT substrate or the color filter substrate. The silver dot coating step may be omitted for the production of an IPS (In-Plane

5:55-63

Next, a step for dropping the liquid crystal onto the TFT substrate in a region corresponding to an area inside the sealing material coated on the color filter substrate is carried out (42S). However, the color filter substrate passes through the dropping step without having the liquid crystal dropped thereon, and is provided into the next step.

Again, it should be recognized that the present invention is not limited to this arrangement. For example, the coating of the sealing material and the dropping of the liquid crystal may be carried out on either of the TFT substrate or the color filter substrate. The silver dot coating step may be omitted

6:36-46

Next, a step for dropping the liquid crystal onto the TFT substrate in a region corresponding to an area inside the sealing material coated on the color filter substrate is carried out (51S). Here, the color filter substrate passes through the liquid crystal dropping step without having the liquid crystal dropped thereon, and is provided into the next step.

6:62-67

EXHIBIT E
U.S. PATENT NO. 6,803,984
TERMS IN DISPUTE

ASSERTED CLAIM 1**LGD's Claim Construction**

1. A method for manufacturing a liquid crystal display device, comprising the steps of:

providing at least a first substrate and a second substrate on a single production process line;

passing the first and second substrates through a sealing material coating portion of the single production process line in serial order, a sealing material being coated on the second substrate with the first substrate being passed through the sealing material coating portion without forming a sealing material thereon;

~

passing the first and the second substrates through a liquid crystal dispensing portion of the single production process line in serial order, liquid crystal being dispensed onto a pixel region of one of the first and second substrates with the other one of the first and second substrates being passed through the liquid crystal dispensing portion without dispensing liquid crystal thereon; and

assembling the first substrate with the second substrate to form a liquid crystal panel of at least one liquid crystal display device.

a liquid crystal dispensing portion of the single production process line – a portion of the single production process line where liquid crystal is selectively dispensed

a pixel region – area corresponding to the inside of the sealing material

INTRINSIC EVIDENCE FOR DISPUTED TERMS “A LIQUID CRYSTAL DISPENSING PORTION OF THE SINGLE PRODUCTION PROCESS LINE”:

The TFT substrate and the color filter substrate are alternately provided into a production line having a single line structure for progressing the liquid crystal cell process. Processing equipment can be considered as equipment for the TFT substrate, equipment for the color filter substrate or both. The respective substrates are preferably provided to and processed by the corresponding equipment automatically in accordance with information on the substrates.

5:23-30

Next, a step for dropping the liquid crystal onto the TFT substrate in a region corresponding to an area inside the sealing material coated on the color filter substrate is carried out (28S). Here, the color filter substrate passes through the liquid crystal dropping step (28S) without having the liquid crystal dropped thereon, and is provided into the next step.

Of course, it should be recognized that the present invention is not limited to this arrangement. For example, the coating of the sealing material, and the dropping of the liquid crystal material may be carried out on either of the TFT substrate or the color filter substrate. The silver dot coating step may be omitted for the production of an IPS (In-Plane

5:55-63

Next, a step for dropping the liquid crystal onto the TFT substrate in a region corresponding to an area inside the sealing material coated on the color filter substrate is carried out (42S). However, the color filter substrate passes through the dropping step without having the liquid crystal dropped thereon, and is provided into the next step.

Again, it should be recognized that the present invention is not limited to this arrangement. For example, the coating of the sealing material and the dropping of the liquid crystal may be carried out on either of the TFT substrate or the color filter substrate. The silver dot coating step may be omitted

6:36-46

Next, a step for dropping the liquid crystal onto the TFT substrate in a region corresponding to an area inside the sealing material coated on the color filter substrate is carried out (51S). Here, the color filter substrate passes through the liquid crystal dropping step without having the liquid crystal dropped thereon, and is provided into the next step.

6:62-67

INTRINSIC EVIDENCE FOR DISPUTED TERMS “A PIXEL REGION”:

Next, a step for dropping the liquid crystal onto the TFT substrate in a region corresponding to an area inside the sealing material coated on the color filter substrate is carried out (28S). Here, the color filter substrate passes through the liquid crystal dropping step (28S) without having the liquid crystal dropped thereon, and is provided into the next step.

5:56-59

Next, a step for dropping the liquid crystal onto the TFT substrate in a region corresponding to an area inside the sealing material coated on the color filter substrate is carried out (42S). However, the color filter substrate passes through the dropping step without having the liquid crystal dropped thereon, and is provided into the next step.

6:36-39

EXHIBIT
U.S. PATENT NO. 6,803,984
TERMS IN DISPUTE

ASSERTED CLAIM 5

5. The method according to claim 4, wherein the first substrate is disposed in the liquid crystal dispensing portion and the liquid crystal is dispensed onto the first substrate at the same time that the second substrate is disposed in the sealing material coating portion.

ASSERTED CLAIM 10

10. The method according to claim 1, further comprising the step of cleaning the first substrate and the second substrate in serial order in a same cleaning unit.

LGD's Claim Construction

the liquid crystal is dispensed onto the first substrate at the same time that the second substrate is disposed in the sealing material coating portion – a point in time when liquid crystal is being dispensed on the first substrate overlaps with a point in time when the second substrate is located in the portion of the single production process line where the sealing material is selectively applied

in serial order in a same cleaning unit – one after the other in the same cleaning equipment

INTRINSIC EVIDENCE FOR DISPUTED TERM “THE LIQUID CRYSTAL IS DISPENSED ONTO THE FIRST SUBSTRATE AT THE SAME TIME THAT THE SECOND SUBSTRATE IS DISPOSED IN THE SEALING MATERIAL COATING PORTION”:

step is performed on the other substrate. That is, the production process line receives many thin film transistor substrates and color filter substrates in serial order. Each pair of substrates will pass through each component of the production process line. However, both substrates of each pair need not be disposed in the same component of the production process line at the same time. Thus, one substrate of the pair may be operated on by one component of the production process line at the same time that the other substrate of the pair is being operated on by another component.

7:22-34

INTRINSIC EVIDENCE FOR DISPUTED TERM “IN SERIAL ORDER IN A SAME CLEANING UNIT”:

curing step (10S). That is, two production lines are used so that the TFT substrate and the CF substrate respectively pass through the orientation step (1S), the cleaning step (2S), the sealing material coating step (3S), the silver dotting step (5S), and the liquid crystal dropping step (6S) in parallel production lines. The use of two production lines results in poor spatial efficiency, higher costs caused by two sets of expensive equipment, and efficiency losses due to different processing times between the two production lines (i.e., line unbalance). Moreover, an inoperative state of one production line caused by failure of the other line reduces productivity substantially.

3:31-43

The TFT substrate and the color filter substrate are alternately provided into a production line having a single line structure for progressing the liquid crystal cell process. Processing equipment can be considered as equipment for the TFT substrate, equipment for the color filter substrate or both. The respective substrates are preferably provided to and processed by the corresponding equipment automatically in accordance with information on the substrates.

5:23-30

After the TFT substrate and the color filter substrate that have passed through the orientation step are cleaned (25S), a sealing material is coated onto the color filter substrate, without providing an hole structure for liquid crystal injection so that the color filter substrate can later be assembled with the TFT substrate on a periphery of a pixel region with a fixed gap between the TFT substrate and the color filter substrate (26S). In contrast, the TFT substrate passes through the sealing material coating step (26S) without coating the sealing material and is provided into the next step.

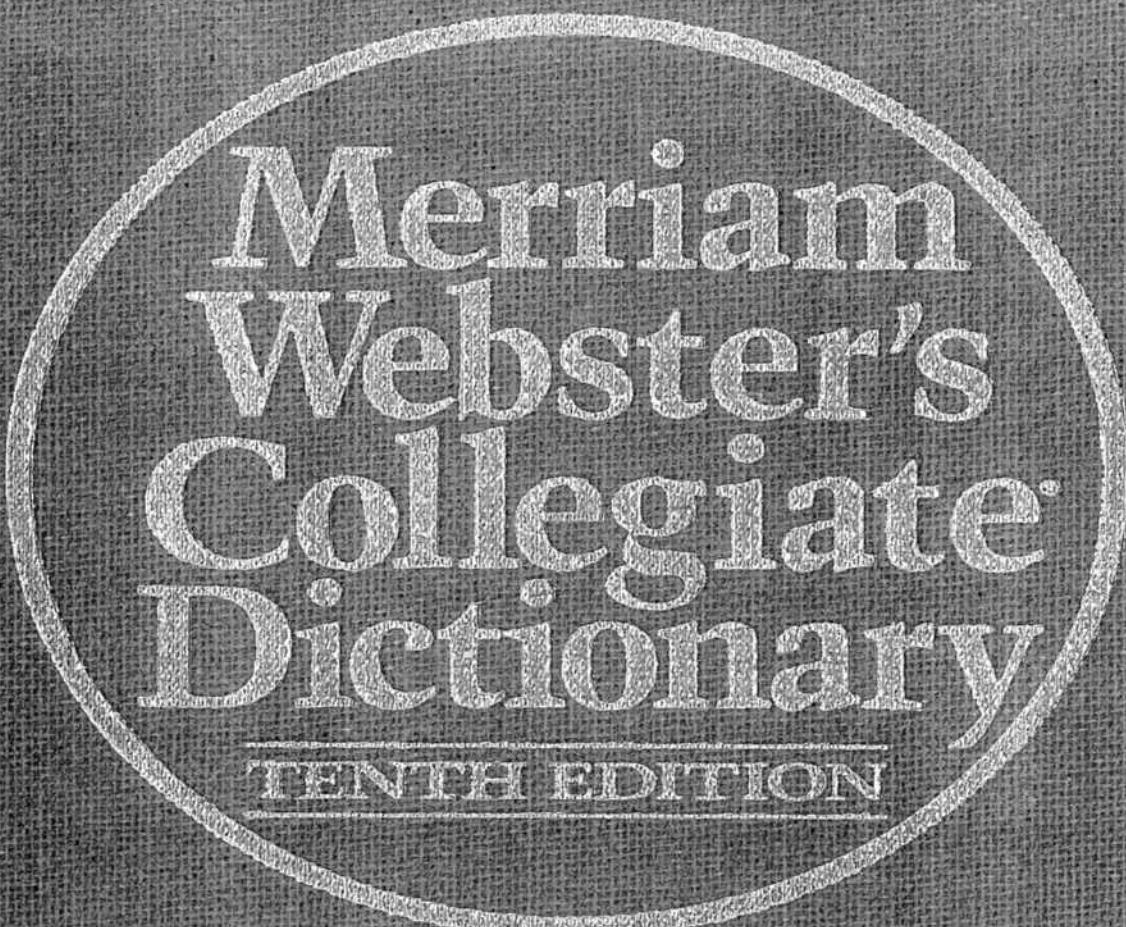
5:40-50

INTRINSIC EVIDENCE FOR DISPUTED TERM “IN SERIAL ORDER IN A SAME CLEANING UNIT” (cont’d):

Also, it should be recognized that a particular step may be performed on one substrate at the same time that a different step is performed on the other substrate. That is, the production process line receives many thin film transistor substrates and color filter substrates in serial order. Each pair of substrates will pass through each component of the production process line. However, both substrates of each pair need not be disposed in the same component of the production process line at the same time. Thus, one substrate of the pair may be operated on by one component of the production process line at the same time that the other substrate of the pair is being operated on by another component.

7:21-34

EXHIBIT L-15(a)





Merriam- Webster's Collegiate® Dictionary

TENTH EDITION

Merriam-Webster, Incorporated
Springfield, Massachusetts, U.S.A.



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Library of Congress Cataloging in Publication Data
Main entry under title:

Merriam-Webster's collegiate dictionary. — 10th ed.

p. cm.

ISBN 0-87779-708-0 (unindexed). — ISBN 0-87779-709-9 (indexed).

— ISBN 0-87779-710-2 (deluxe). — ISBN 0-87779-707-2 (laminated cover).

1. English language—Dictionaries.

PE1628.M36 1994

423—dc20

93-32603

CIP

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676 limit • line

terms of the sequence differs from this number by less than any given positive amount 7: something that is exasperating or intolerable — **lim-it-less** \l-im'\-ləs\ adj — **lim-it-less-ly** adv — **lim-it-less-ness** n

limit vt (14c) 1: to assign certain limits to: PREScribe (reserved the right to ~ use of the land) 2 a: to restrict the bounds or limits of (the specialist can no longer ~ himself to his specialty) b: to curtail or reduce in quantity or extent (we must ~ the power of aggressors) — **lim-it-able** \l-im'\-ə-tə-bəl\ adj — **lim-it-er** n

syn LIMIT, RESTRICT, CIRCUMSCRIBE, CONFINE mean to set bounds for. LIMIT implies setting a point or line (as in time, space, speed, or degree) beyond which something cannot or is not permitted to go (visits are *limited* to 30 minutes). RESTRICT suggests a narrowing or tightening or restraining within or as if within an encircling boundary (laws intended to *restrict* the freedom of the press). CIRCUMSCRIBE stresses a restriction on all sides and by clearly defined boundaries (the work of the investigating committee was carefully *circumscribed*). CONFINE suggests severe restraint and a resulting cramping, fettering, or hampering (our freedom of choice was *confined* by finances).

lim-i-tary \l-im'\-tə-rē\ adj (1620) 1 *archaic*: subject to limits 2 a: *archaic*: of or relating to a boundary b: LIMITING, ENCLOSING

lim-i-ta-tion \l-im'\-tə-shən\ n (14c) 1: an act or instance of limiting 2: the quality or state of being limited 3: something that limits: RESTRAINT

4: a certain period limited by statute after which actions, suits, or prosecutions cannot be brought in the courts — **lim-i-ta-tion-al** \l-im'\-tə-shən-əl\ adj

lim-i-ta-tive \l-im'\-tə-tiv\ adj (1530): LIMITING, RESTRICTIVE

lim-it-ed adj (1610) 1 a: confined within limits: RESTRICTED (as in success) b: of a train: offering faster service esp. by making a limited number of stops 2: characterized by enforceable limitations prescribed (as by a constitution) upon the scope or exercise of powers (as ~ monarchy) 3: lacking breadth and originality (a bit ~; a bit thick in the head — Virginia Woolf) — **lim-it-ed-ly** adv — **lim-it-ed-ness** n

limited-access adj (1944) of a road: having access restricted to a relatively small number of points

limited edition n (1903): an issue of something collectible (as books, prints, or medals) that is advertised to be limited to a relatively small number of copies

limited liability n (1855): liability (as of a stockholder or shipowner) limited by statute or treaty

limited partner n (1907): a partner in a venture who has no management authority and whose liability is restricted to the amount of his investment — compare GENERAL PARTNER — **limited partnership** n

limited war n (1939): a war whose objective is less than the total defeat of the enemy

lim-it-ing adj (1849) 1 a: functioning as a limit: RESTRICTIVE (as in value) b: being an environmental factor (as a nutrient) that limits the population size of an organism 2: serving to specify the application of the modified noun (this in "this book" is a ~ word) — **lim-it-ing-ly** adv

limit point n (1905): a point that is related to a set of points in such a way that every neighborhood of the point no matter how small contains another point belonging to the set — called also *point of accumulation*

lim-i-trophe \l-im'\-tropf\ adj [F, fr. LL *limitrophus* bordering upon, lit., providing subsistence for frontier troops, irreg. fr. L *limit-*, *limes* boundary + Gk *trophos* feeder, fr. *trephein* to nourish] (1763) : situated on a border or frontier: ADJACENT

lim-mer \l-im'\-mər\ n [ME (Sc)] (15c) 1 chiefly Scot: SCOUNDREL 2 chiefly Scot: PROSTITUTE

limm \l-im'\-m\ vt **limmed**; **limm-ing** \l-im'\-mig, \l-im'\-mij\ [ME *luminen*, *lumen* to illuminate (a manuscript), fr. MF *enluminer*, fr. L *illuminare* to illuminate] (1592) 1: to draw or paint on a surface 2: to outline in clear sharp detail: DELINEATE 3: DESCRIBE — **limm-er** \l-im'\-mər, \l-im'\-mər\ n

lim-net-ic \l-im'\-ne-tik\ adj [ISV, fr. Gk *limnē* pool, marshy lake; perh. akin to L *limus* mud — more at LIME] (1899) : of, relating to, or inhabiting the open water of a body of fresh water (as environment)

lim-nol-o-gy \l-im'\-nə-lə-jē\ n [Gk *limnē* + ISV -logy] (ca. 1888) : the scientific study of bodies of fresh water (as lakes) — **lim-no-log-i-cal** \l-im'\-nə-lə-jik\ also **lim-no-log-ic** \l-im'\-nə-jik\ adj — **lim-nol-o-gist** \l-im'\-nə-lə-jist\ n

limo \l-im'\-mō\ n, pl **lim-os** (1968): LIMOUSINE

limoges \l-im'\-mōzh\ n [Limoges, France] (1844): enamelware or porcelain made at Limoges

lim-o-nene \l-im'\-mə-nēn\ n [ISV, fr. F *limon* lemon, fr. MF] (1845) : a widely distributed terpene hydrocarbon $C_{10}H_{16}$ that occurs in essential oils (as of oranges or lemons) and has a lemon odor

li-mo-nite \l-im'\-mīt\ n [G *Limonit*, fr. Gk *leimōn* wet meadow; akin to Gk *limnē* pool] (1823) : a native hydrous ferric oxide of variable composition that is a major ore of iron — **li-mo-nit-ic** \l-im'\-mītik\ adj

lim-ou-sin \l-im'\-mū-sin, \l-im'\-mē-zēn, \l-im'\-mē-\zēn\ n [Limousin, France] (1920) : any of a French breed of medium-sized yellow-red cattle bred esp. for meat

lim-ou-sine \l-im'\-mē-zēn, \l-im'\-mē-\zēn\ n [F, lit., cloak, fr. *Limousin*, France] (1902) 1: a large luxurious often chauffeur-driven sedan that sometimes has a glass partition separating the driver's seat from the passenger compartment 2: a large vehicle for transporting passengers to and from an airport

limousine liberal n (1969) : a wealthy political liberal

limp \l-im'\-p\ vi [prob. fr. ME *lympen* to fall short; akin to OE *limpan* to happen, *lemphealt* lame] (ca. 1570) 1 a: to walk lamely; esp: to walk favoring one leg b: to go unsteadily: FALTER 2: to proceed slowly or with difficulty (the ship ~ed back to port) — **limp-er** n

limp adj [akin to *limp*] (ca. 1706) 1 a: lacking firm texture, substance, or structure (as curtains) (her hair hung ~ about her shoulders) b: not stiff or rigid (a book in a ~ binding) 2 a: WEARY, EXHAUSTED (as with fatigue) b: lacking in strength, vigor, or firmness: SPIRITLESS — **limp-ly** adv — **limp-ness** n

lim-pa \l-im'\-pə\ n [Sw] (1948) : rye bread made with molasses or brown sugar

lim-pet \l-im'\-pət\ n [ME *lempet*, fr. OE *lempedu*, fr. ML *lampreda* lamprey] (bef. 12c) 1: a marine gastropod mollusk (esp. families

Acmaeidae and Patellidae) that has a low conical shell broadly open beneath, browses over rocks or timbers in the littoral area, and clings very tightly when disturbed 2: one that clings tenaciously to someone or something 3: an explosive device designed to cling magnetically to a metallic surface (as the hull of a ship)

lim-pid \l-im'\-pəd\ adj [F or L; F *limpide*, L *limpidus*, perh. fr. *lympha* water — more at LYMPH] (1613) 1 a: marked by transparency: PELLUCID (as streams)

b: clear and simple in style (as prose) 2: absolutely serene and untroubled — **syn** see CLEAR — **lim-pid-ity** \l-im'\-pi-də-tē\ n — **lim-pid-ly** \l-im'\-pəd-lē\ adv — **lim-pid-ness** n

limp-kin \l-im'\-pə-kən\ [perh. fr. *l'imp*] (1871) : a large brown wading bird (*Aramus guarauna*) of southern Georgia, Florida, and Central and So. America that resembles a bittern but has a longer slightly curved bill, longer neck and legs, and white stripes on head and neck

limp-wrist-ed \l-im'\-ris-təd\ adj (ca. 1960) 1: EFFEMINATE 2: WEAK

lim-u-lus \l-im'\-yə-ləs\ n, pl -li \l-im'\-lē, -lē\ [NL, genus name, fr. L *limus* oblique, transverse — more at LIMEN] (1837) : HORSESHOE CRAB

limy \l-im'\-mē\ adj **lim-i-er**; **est** (ca. 1552) 1: smeared with or consisting of lime: VISCOUS 2: containing lime or limestone 3: resembling or having the qualities of lime

lin-ac \l-in'\-nak\ n (1950) : LINEAR ACCELERATOR

lin-age \l-in'\-nij\ n (1884) : the number of lines of printed or written matter

lin-al-o-ol \l-in'\-nə-lə-wəl, li-, -wəl\ n [ISV, fr. MexSp *linaloe*, tree yielding perfume, fr. ML *lignum aloes*, lit., wood of the aloe] (1891) : a fragrant liquid alcohol $C_{10}H_{16}O$ that occurs both free and in the form of esters in many essential oils and is used in perfumes, soaps, and flavoring materials

linch-pin \l-inch'\-pin\ n [ME *lynspin*, fr. *lyn* lynchpin (fr. OE *lynis*) + *pin*: akin to MHG *luns* lynchpin] (13c) 1: a locking pin inserted crosswise (as through the end of an axle or shaft) 2: one that serves to hold together the elements of a complex (as in the defense's case)

lin-coln \l-in'\-kən\ n [Lincolnshire, England] (1837) : any of an English breed of long-wooled mutton-type sheep

lin-coln-i-a-na \l-in'\-lin, -kō-nē-\tā-nə, -\tā-nə\ n pl (1921) : materials relating to Abraham Lincoln

Lincoln's Birthday \l-in'\-konz-\ n (1898) 1: February 12 observed as a legal holiday in many states of the U.S. 2: the first Monday in February observed as a legal holiday by some states of the U.S.

lin-co-my-cin \l-in'\-kə-mi-\s\ n [NL *lincolnensis* (specific epithet of *Streptomyces lincolnensis*) + E -mycin] (1963) : an antibiotic obtained from an actinomycete (*Streptomyces lincolnensis*) and effective esp. against gram-positive bacteria

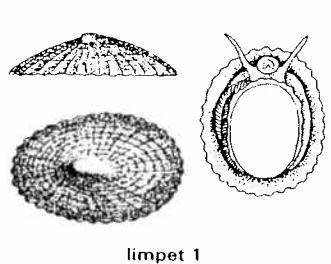
lin-dane \l-in'\-dān\ n [T. van der Linden, 20th cent. Du. chemist] (ca. 1949) : an insecticide that consists chiefly of the gamma isomer of BHC and is biodegraded very slowly

lin-den \l-in'\-dən\ n [ME, made of linden wood, fr. OE, fr. *lind* linden tree; prob. akin to OE *lithé* gentle — more at LITHE] (1577) 1: any of a genus (*Tilia* of the family Tiliaceae, the linden family) of trees of temperate regions that are planted as shade trees and are distinguished by having cordate leaves and a winglike bract attached to the peduncle of the flower and fruit: as a: a European tree (*T. europaea*) much used for ornamental planting b: a tall forest tree (*T. americana*) chiefly of the central and eastern U.S. — called also *basswood*, *whitewood* 2: the light fine-grained white wood of a linden; esp: BASSWOOD 2

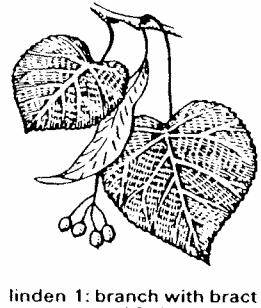
lin-din \l-in'\-dē\ n [prob. fr. *Lindy*, nickname of Charles A. Lindbergh] (1931) : a jitterbug dance originating in Harlem and later developing many local variants

line \l-in'\-n, often attrib [ME; partly fr. OF *ligne*, fr. L *linea*, fr. fem. of *linus* made of flax, fr. *linum* flax; partly fr. OE *lin* flax — more at LINEN] (bef. 12c) 1 a: THREAD, STRING, CORD, ROPE: as (1) a comparatively strong slender cord (2) CLOTHESLINE (3) a rope used on shipboard b (1) a device for catching fish consisting of a cord with hooks and other fishing gear (2) scope for activity

ROPE c: a length of material used in measuring and leveling d: piping for conveying a fluid (as steam) e (1) a wire or pair of wires connecting one telegraph or telephone station with another or a whole system of such wires; also: any circuit in an electronic communication system (2) a telephone connection (tried to get a ~); also: an individual telephone extension (a call on ~ 2) (3) the principal circuits of an electric power system 2 a (1) a horizontal row of written or printed characters; also: a blank row in lieu of such characters (2) a unit in the rhythmic structure of verse formed by the grouping of a number of the smallest units of the rhythm (as metrical feet) (3) an often numbered section of a computer program containing a single command or a small number of commands b: a short letter: NOTE c pl: a certificate of marriage d: the words making up a part in a drama — usu. used in pl. e: any of the successive horizontal rows of picture elements on the screen of a cathode-ray tube (as a television screen) 3 a: something (as a ridge or seam) that is distinct, elongated, and narrow b: a narrow crease (as on the face) : WRINKLE c: the course or direction of something in motion: ROUTE d (1) a state of agreement or conformity: ACCORDANCE (2) a state of order, control, or obedience (you're getting out of ~) e: a boundary of an area (the state ~) f: the track and roadbed of a railway g: an amount of cocaine that is arranged in a line to be inhaled through the nose 4 a: a course of conduct, action, or thought b: a field of



limpet 1



linden 1: branch with bract and fruit

activity or interest **c** : a glib often persuasive way of talking **5** **a** : LIMIT, RESTRAINT **b** archaic : position in life : **LOT 6** **a** (1) : FAMILY, LINEAGE (2) : a strain produced and maintained esp. by selective breeding or biological culture (3) : a chronological series **b** : dispositions made to cover extended military positions and presenting a front to the enemy — usu. used in pl. **c** : military formation in which the different elements are abreast of each other **d** : naval ships arranged in a regular order **e** (1) : the combatant forces of an army distinguished from the staff corps and supply services (2) : the force of a regular navy **f** (1) : officers of the navy eligible for command at sea distinguished from officers of the staff (2) : officers of the army belonging to a combatant branch **g** : an arrangement or placement of persons or objects of one kind in an orderly series (**a** ~ of trees) (stand on ~) (waiting in ~); also : the persons or objects so positioned (the ~ moved slowly at the bank) **h** (1) : a group of public conveyances plying regularly under one management over a route (2) : a system of transportation together with its equipment, routes, and appurtenances; also : the company owning or operating it **i** : a succession of musical notes esp. considered in melodic phrases **j** (1) : an arrangement of operations in manufacturing permitting sequential occurrence on various stages of production (2) : the personnel of an organization that are responsible for its stated objective **k** (1) : the 7 players including center, 2 guards, 2 tackles, and 2 ends who in offensive football play line up on or within one foot of the line of scrimmage (2) : the players who in defensive play line up within one yard of the line of scrimmage **7** : a narrow elongated mark drawn or projected: as **a** (1) : a circle of latitude or longitude on a map (2) : EQUATOR **b** : a mark (as on a map) recording a boundary, division, or contour **c** : any of the horizontal parallel strokes on a music staff on or between which notes are placed — compare SPACE **d** : a mark (as by pencil) that forms part of the formal design of a picture distinguished from the shading or color **e** : a division on a bridge score dividing the score for bonuses from that for tricks **f** (1) : a demarcation of a limit with reference to which the playing of some game or sport is regulated — usu. used in combination (2) : a marked or imaginary line across a playing area (as a football field) parallel to the end line (3) : LINE OF SCRIMMAGE **8** : a straight or curved geometric element that is generated by a moving point and that has extension only along the path of the point : CURVE **9** **a** : a defining outline : CONTOUR **b** : a general plan : MODEL — usu. used in pl. **10** **a** chiefly Brit : PICA — used to indicate the size of large type **b** : the unit of fineness of halftones expressed as the number of screen lines to the linear inch **11** : merchandise or services of the same general class for sale or regularly available **12** **a** : a source of information : INSIGHT **b** : betting odds offered by a bookmaker esp. on a sporting event **13** : a complete game of 10 frames in bowling — called also string **14** : LINE DRIVE — **liny** also **lin-ne** \li-nē\ adj — **between the lines** **1** : by implication : in an indirect way **2** : by way of inference — **down the line** : all the way : FULLY — **in line for** : due or in a position to receive — **on line** : in or into operation — **on the line** **1** : in complete commitment and at great risk (puts his future on the line by backing that policy) **2** : on the border between two categories **3** : IMMEDIATELY (paid cash on the line) **line vb lined; lin-ing** vt (1530) **1** : to mark or cover with a line or lines (lined paper) **2** : to depict with lines : DRAW **3** : to place or form a line along (pedestrians ~ the walks) **4** : to form into a line or lines : ALIGN (up troops) **5** : to hit (as a baseball) hard and in a usu. straight line ~ **vi** **1** : to hit a line drive in baseball **2** : to come into the correct relative position : ALIGN **line vt lined; lin-ing** [ME, fr. OE *lin*] (14c) **1** : to cover the inner surface of (a cloak with silk) **2** : to put something in the inside of : FILL **3** : to serve as the lining of (tapestries lined the walls) **4 obs** : FORTIFY — **line one's pockets** : to take money freely and esp. dishonestly **5** **lin-e-age** \li-nē-ij also \li-nij\ n (14c) **1** **a** : descent in a line from a common progenitor **b** : DERIVATION **2** : a group of individuals tracing descent from a common ancestor; esp : such a group of persons whose common ancestor is regarded as its founder **6** **line-age** \li-nij\ var of LINAGE **7** **lin-e-al** \li-nē-əl\ adj (14c) **1** : LINEAR **2** : composed of or arranged in lines **3** **a** : consisting of or being in a direct male or female line of ancestry — compare COLLATERAL **b** : relating to or derived from ancestors : HEREDITARY **c** : descended in a direct line **4** **a** : belonging to one lineage (~ relatives) **b** : of, relating to, or dealing with a lineage — **lin-e-al-i-ty** \li-nē-ə-lē-tē\ n — **lin-e-al-ly** \li-nē-ə-lē\ adv **lin-e-a-ment** \li-nē-ə-mənt\ n [ME, fr. L *lineamentum*, fr. *lineare* to draw a line, fr. *linea*] (15c) **1** **a** : an outline, feature, or contour of a body or figure and esp. of a face — usu. used in pl. **b** : a linear topographic feature (as of the earth or a planet) that reveals a characteristic (as a fault or the subsurface structure) **2** : a distinguishing or characteristic feature — usu. used in pl. — **lin-e-a-men-tal** \li-nē-ə-mən-təl\ adj **8** **lin-e-ar** \li-nē-ər\ adj (ca. 1656) **1** **a** (1) : of, relating to, resembling, or having a graph that is a line and esp. a straight line : STRAIGHT (2) : involving a single dimension **b** (1) : of the first degree with respect to one or more variables (2) : of, relating to, based on, or being linear equations, linear differential equations, linear functions, linear transformations, or linear algebra **c** (1) : characterized by an emphasis on line (~ art) (2) : composed of simply drawn lines with little attempt at pictorial representation (~ script) **d** : consisting of a straight chain of atoms **2** : elongated with nearly parallel sides (~ leaf) — see LEAF illustration **3** : having or being a response or output that is directly proportional to the input **4** : of, relating to, or based or depending on sequential development (~ thinking) (a ~ narrative) — **lin-e-ar-i-ty** \li-nē-ər-ə-tē\ n — **lin-e-ar-ly** \li-nē-ər-lē\ adv **9** **Linear A** \li-nā\ n (1948) : a linear form of writing used in Crete from the 18th to the 15th centuries B.C. **10** **linear accelerator** n (1945) : a device in which charged particles are accelerated in a straight line by successive impulses from a series of electric fields **11** **linear algebra** n (ca. 1884) : a branch of mathematics that is concerned with mathematical structures closed under the operations of addition and scalar multiplication and that includes the theory of systems of linear equations, matrices, determinants, vector spaces, and linear transformations

Linear B \li-nē-bē\ n (1950) : a linear form of writing employing syllabic characters and used at Knossos on Crete and on the Greek mainland from the 15th to the 12th centuries B.C. for documents in the Mycenaean language **12** **linear combination** n (1960) : a mathematical entity (as $4x + 5z$) which is composed of sums and differences of elements (as variables, matrices, or functions) esp. when the coefficients are not all zero **13** **linear dependence** n (1955) : the property of one set (as of matrices or vectors) of having at least one linear combination of its elements equal to zero when the coefficients are taken from another given set and at least one of its coefficients is not equal to zero — **linearly dependent adj** **14** **linear equation** n (1816) : an equation of the first degree in any number of variables **15** **linear function** n (ca. 1889) **1** : a mathematical function in which the variables appear only in the first degree, are multiplied by constants, and are combined only by addition and subtraction **2** : LINEAR TRANSFORMATION **16** **linear independence** n (1967) : the property of a set (as of matrices or vectors) of having no linear combination of all its elements equal to zero when coefficients are taken from a given set unless the coefficient of each element is zero — **linearly independent adj** **17** **lin-e-ar-ise** Brit var of LINEARIZE **18** **lin-e-ar-ize** \li-nē-ər-əz\ vt -ized; -iz-ing (1895) : to give a linear form to; also : to project in linear form — **lin-e-ar-i-za-tion** \li-nē-ər-əz-ā-shən\ n **19** **linear measure** n (ca. 1890) **1** : a measure of length **2** : a system of measures of length **20** **linear motor** n (1957) : a motor that produces thrust in a straight line by direct induction rather than with the use of gears — called also linear induction motor **21** **linear perspective** n (ca. 1656) : PERSPECTIVE **1a** **linear programming** n (1949) : a mathematical method of solving practical problems (as the allocation of resources) by means of linear functions where the variables involved are subject to constraints **22** **linear space** n (ca. 1889) : VECTOR SPACE **23** **linear transformation** n (ca. 1889) **1** : a transformation in which the new variables are linear functions of the old variables **2** : a function that maps the vectors of one vector space onto the vectors of the same or another vector space with the same field of scalars in such a way that the image of the sum of two vectors equals the sum of their images and the image of the product of a scalar and a vector equals the product of the scalar and the image of the vector **24** **lin-e-a-tion** \li-nē-ə-shən\ n [ME *lineacion* outline, fr. L *lineatione*, *lineare*, fr. *lineare* to mark with lines, fr. *linea*] (14c) **1** **a** : the action of marking with lines : DELINEATION **b** : OUTLINE **2** : an arrangement of lines **25** **line-back-er** \lin-ba-kər\ n (1949) : a defensive football player who lines up immediately behind the line of scrimmage to make tackles on running plays through the line or defend against short passes **26** **line-back-ing** \lin-ba-king\ n (1953) : the action or art of playing linebacker **27** **line-breed-ing** \lin-brē-dig\ n (ca. 1879) : the interbreeding of individuals within a particular line of descent usu. to perpetuate desirable characters — **line-bred** \lin-bred\ adj **28** **line-cast-er** \lin-kas-tər\ n (1964) : a machine that casts metal type in lines — **line-cast-ing** \lin-tin\ n **29** **line-cut** \lin-kut\ (ca. 1909) : a photoengraving of a line drawing **30** **line drawing** n (1891) : a drawing made in solid lines **31** **line drive** n (1912) : a batted baseball hit in a nearly straight line usu. not far above the ground **32** **line engraving** n (1802) : an engraving cut by hand directly in the plate **33** **line graph** n (ca. 1924) : a graph in which points representing values of a variable for suitable values of an independent variable are connected by a broken line **34** **line-haul** \lin-hōl\ n (ca. 1923) : the transporting of items or persons between terminals **35** **line item** n (1962) : an appropriation that is itemized on a separate line in a budget — **line-item** \lin-i-təm\ adj **36** **line judge** n (1970) : a football linesman whose duties include keeping track of the official time for the game **37** **line-man** \lin-mən\ n (1876) **1** : one who sets up or repairs electric wire communication or power lines — called also linesman **2** : a player in the forward line of a team; specif : a football player in the line **38** **lin-en** \li-nən\ adj [ME, fr. OE *linen*, fr. *lin* flax, fr. L *linum* flax; akin to Gk *linon* flax, thread] (bef. 12c) **1** : made of flax **2** : made of or resembling linен **39** **linen** n (14c) **1** **a** : cloth made of flax and noted for its strength, coolness, and luster **b** : thread or yarn spun from flax **2** : clothing or household articles made of linen cloth or similar fabric **3** : paper made from linen fibers or with a linen finish **40** **line of credit** (1917) : the maximum credit allowed a buyer or borrower **41** **line of duty** (ca. 1918) : all that is authorized, required, or normally associated with some field of responsibility **42** **line officer** n (1850) : a commissioned officer assigned to the line of the army or navy — compare STAFF OFFICER **43** **line of force** (1873) : a line in a field of force (as a magnetic or electric field) whose tangent at any point gives the direction of the field at that point **44** **line of scrimmage** (ca. 1909) : an imaginary line in football that is parallel to the goal lines and tangent to the nose of the ball laid on the ground and that marks the position of the ball at the start of each down

EXHIBIT L-15(b)





Merriam- Webster's Collegiate® Dictionary

TENTH EDITION

Merriam-Webster, Incorporated
Springfield, Massachusetts, U.S.A.



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Library of Congress Cataloging in Publication Data
Main entry under title:

Merriam-Webster's collegiate dictionary. — 10th ed.

p. cm.

ISBN 0-87779-708-0 (unindexed). — ISBN 0-87779-709-9 (indexed).
— ISBN 0-87779-710-2 (deluxe). — ISBN 0-87779-707-2 (laminated cover).

1. English language—Dictionaries.

PE1628.M36 1994

423—dc20

93-32603

CIP

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Made in the United States of America

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908 portentously • positive

solemn or important : POMPOUS **c** : ponderously excessive (that discipline's overwrought, ~ phrases —R. M. Coles) **syn** see OMINOUS —
por-ten-tous-ly *adv* —
por-ten-tous-ness *n*

1·porter \pôr-tôr, 'pôr-\ *n* [ME, fr. OF *portier*, fr. LL *portarius*, fr. L *porta* gate — more at PORT] (13c) **chiefly Brit** : a person stationed at a door or gate to admit or assist those entering

2·porter *n* [ME *portour*, fr. MF *porteour*, fr. LL *portator*, fr. L *portare* to carry — more at FARE] (14c) **1** : a person who carries burdens; **esp** : one employed to carry baggage for patrons at a hotel or transportation terminal **2** : a parlor-car or sleeping-car attendant who waits on passengers and makes up berths **3** [short for porter's beer] : a heavy dark brown beer brewed from browned or charred malt **4** : a person who does routine cleaning (as in a hospital or office)

3·porter *vt* (1609) : to transport or carry as or as if by a porter ~ *vi* : to act as a porter

porter-age \pôr-âj\ *n* (15c) : a porter's work; **also** : the charge for it

porter-house \pôr-tôr-haus, 'pôr-\ *n* (ca. 1758) **1** *archaic* : a house where malt liquor (as porter) is sold **2** : a large steak cut from the thick end of the short loin to contain a T-shaped bone and a large piece of tenderloin — see BEEF illustration

port-fo-llo \pôr-fôlô, pôr-\ *n, pl -li-os* [It *portafoglio*, fr. *portare* to carry (fr. L) + *foglio* leaf, sheet, fr. L *folum* — more at BLADE] (1722) **1** : a hinged cover or flexible case for carrying loose papers, pictures, or pamphlets **2** [fr. the use of such a case to carry documents of state] : the office and functions of a minister of state or member of a cabinet **3** : the securities held by an investor : the commercial paper held by a financial house (as a bank) **4** : a set of pictures (as drawings or photographs) either bound in book form or loose in a folder

port-hole \pôr-hôl, 'pôr-\ *n* [port] (ca. 1591) **1** : an opening (as a window) with a cover or closure **esp**. in the side of a ship or aircraft **2** : a port through which to shoot **3** : **PORT** 2

Portia \pôr-shô, 'pôr-\ *n* : the heroine in Shakespeare's *The Merchant of Venice*

port-ico \pôr-tî-kô, 'pôr-\ *n, pl -coes or -cos* [It, fr. L *porticus* — more at PORCH] (1605) : a colonnade or covered ambulatory **esp**. in classical architecture and often at the entrance of a building

por-tiere \pôr-tî-yer, pôr-, -tîr; 'pôr-tî-er, 'pôr-\ *n* [F *portière*, fr. OF, fem. of *portier* porter, doorkeeper] (1843) : a curtain hanging across a doorway

portion \pôr-shôn, 'pôr-\ *n* [ME, fr. OF, fr. L *portion-, portio*; akin to L *parti*, *partis* part] (14c) **1** : an individual's part or share of something: as **a** : a share received by gift or inheritance **b** : DOWRY **c** : a helping of food **2** : an individual's lot, fate, or fortune : one's share of good and evil **3** : an often limited part set off or abstracted from a whole (give but that ~ which yourself proposed —Shak.) **syn** see PART, FATE

2·portion *vi* **portioned**; **por-tion-ing** \-sh(ə)nij\ (14c) **1** : to divide into portions : DISTRIBUTE **2** : to allot a dowry to : DOWER

por-tion-less \-shôn-lôs\ *adj* (1782) : having no portion; **esp** : having no dowry or inheritance

port-land cement \pôr-lan(d)-, 'pôr-\ *n* [Isle of Portland, England; fr. its resemblance to a limestone found there] (1824) : a hydraulic cement made by finely pulverizing the clinker produced by calcining to incipient fusion a mixture of clay and limestone or similar materials

port-ly \pôr-lî, 'pôr-\ *adj* **port-li-er**; **-est** [port] (15c) **1** : DIGNIFIED, STATELY **2** : heavy or rotund of body : STOUT — **port-li-ness** *n*

port-man-teau \pôr-'man-(tô), 'pôr-\ *n, pl -teaus or -teaux* \-(tôz\ [MF *portemanteau*, fr. *porter* to carry + *mantel* mantle, fr. L *mantellum* — more at PORT] (1579) **1** : a large suitcase **2** : a word or morpheme whose form and meaning are derived from a blending of two or more distinct forms (as *smog* from *smoke* and *fog*)

2·portmanteau *adj* (1909) **1** : combining more than one use or quality **2** : being a portmanteau (a ~ word)

port of call (1884) **1** : an intermediate port where ships customarily stop for supplies, repairs, or transshipment of cargo **2** : a stop included on an itinerary

port of entry (1840) **1** : a place where foreign goods may be cleared through a customhouse **2** : a place where an alien may be permitted to enter a country

por-trait \pôr-trôt, 'pôr-, -trât\ *n* [MF, fr. pp. of *porter*] (1570) **1** : PICTURE; **esp** : a pictorial representation (as a painting) of a person usu. showing the face **2** : a sculptured figure : BUST, STATUE **3** : a graphic portrayal in words

por-trait-ist \-trâ-list, -trât\ *n* (1866) : a maker of portraits

por-trai-ture \pôr-trâ-chûr, 'pôr-, -chôr-, -tyûr, -tûr\ *n* (14c) **1** : the making of portraits : PORTRAYAL **2** : PORTRAIT

por-tray \pôr-trâ, 'pôr-, pôr-\ *vt* [ME *portraien*, fr. MF *porterre*, fr. L *protrahere* to draw forth, reveal, expose — more at PROTRACT] (14c) **1** : to make a picture of : DEPICT **2** **a** : to describe in words **b** : to play the role of : ENACT **3** : **por-tray-er** *n*

por-tray-al \-trâl\ *n* (ca. 1847) **1** : the act or process or an instance of portraying : REPRESENTATION **2** : PORTRAIT

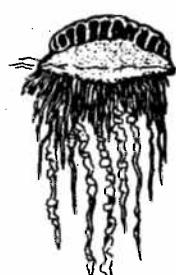
por-trress \pôr-trôs, 'pôr-\ *n* (15c) : a female porter: as **a** : a doorkeeper in a convent or apartment house **b** : CHARWOMAN

Port Royal-ist \pôr-'rôi-ä-list, pôr-\ *n* [F *port royaliste*, fr. *Port-Royal*, a convent near Versailles, France] (ca. 1741) : a member or adherent of a 17th century French Jansenist lay community noted for its logicians and educators

Port Sa-lut \,pôr-sa-'lü, -sa-; -sôl-'yü, -sal-\ *n* (1902) : PORT DU SALUT

Portuguese \pôr-chô-, 'pôr-\ *n, pl* Portuguese [Pg *português*, adj. & n., fr. *Portugal*] (1534) **1** **a** : a native or inhabitant of Portugal **b** : one who is of Portuguese descent **2** : the Romance language of Portugal and Brazil — **Portuguese** *adj*

Portuguese man-of-war *n, pl* Portuguese man-of-war *also* Portuguese men-of-war (1707) : any of a genus (*Physalia*) of large tropical and subtropical pelagic siphonophores having a crested bladderlike float which bears the colony



Portuguese man-of-war

comprised of three types of zooids on the lower surface with one of the three having nematocyst-equipped tentacles

por-tu-laca \,pôr-chô-'la-kô, ,pôr-\ *n* [NL, fr. L, purslane, fr. *portula*, dim. of *porta* gate; fr. the lid of its capsule — more at PORT] (1548) : any of a genus (*Portulaca*) of mainly tropical succulent herbs of the purslane family; **esp** : a widely cultivated plant (*P. grandiflora*) with showy flowers and small conical leaves

port-wine stain \pôr-'win-, 'pôr-\ *n* (ca. 1909) : a reddish purple superficial hemangioma of the skin commonly occurring as a birthmark

po-sa-da \pôs-sâ-'dâ\ *n* [Sp, fr. *posar* to lodge, fr. LL *pausare*] (1763) : an inn in Spanish-speaking countries

pose \pôz\ *vb* **posed**; **pos-ing** [ME, fr. MF *poser*, fr. (assumed) VL *pausare*, fr. LL, to stop, rest, pause, fr. L *pausa pause*] *vt* (14c) **1** **a** : to present for attention or consideration (let me ~ a question) **b** : to put or set forth : OFFER (this attitude ~s a threat to our hopes for peace) **2** **a** : to put or set in place **b** : to place (as a model) in a studied attitude ~ **vi** **1** : to assume a posture or attitude usu. for artistic purposes **2** : to affect an attitude or character usu. to deceive or impress

2·pose *n* (1818) **1** : a sustained posture; **esp** : one assumed for artistic effect **2** : an attitude, role, or characteristic assumed for effect

syn POSE, AIR, AIRS, AFFECTATION, MANNERISM mean an adopted way of speaking or behaving. POSE implies an attitude deliberately assumed in order to impress others (her shyness was just a pose). AIR may suggest natural acquirement through environment or way of life (a traveler's sophisticated air). AIRS always implies artificiality and pretentiousness (snobbish airs). AFFECTATION applies to a trick of speech or behavior that strikes the observer as insincere (the posh accent is an affectation). MANNERISM applies to an acquired eccentricity that has become a habit (gesturing with a cigarette was her most noticeable mannerism).

3·pose *vt* **posed**; **pos-ing** (short for earlier *appose*, fr. ME *apposen*, alter. of *opponere* to oppose) (1593) : PUZZLE, BAFFLE

po-seid-on \pô-sî-'dô\ *n* [L, fr. Gk *Poseidôn*] : the Greek god of the sea — compare NEPTUNE

1·pos-er \pôz-zâr\ *n* [pose] (1793) : a puzzling or baffling question

2·poser *n* [pose] (1888) : a person who poses

po-seur \pô-'zôr\ *n* [F, lit., poser, fr. *poser*] (1872) : a person who pretends to be what he or she is not : an affected or insincere person

posh \pâsh\ *adj* [origin unknown] (1918) : ELEGANT, FASHIONABLE — **posh-ly** *adv* — **posh-ness** *n*

pos-it \pâz-zât\ *vt* **pos-it-ed** \pâz-zâ-tôd, 'pâz-tôd\; **pos-it-ing** \pâz-zâ-tin, 'pâz-tîng\ [L *positus*, pp. of *ponere*] (1647) **1** : to dispose or set firmly : FIX **2** : to assume or affirm the existence of : POSTULATE **3** : to propose as an explanation : SUGGEST

posi-tion \pôz-zî-shô\ [ME *posycion*, fr. MF *position*, fr. L *positio*, fr. *ponere* to lay down, put, place, fr. (assumed) OL *posinare*, fr. *po-* away (akin to OCS *po-*, perfective prefix, Gk *apo* away) + L *sinere* to leave — more at OF] (14c) **1** : an act of placing or arranging: as **a** : the laying down of a proposition or thesis **b** : an arranging in order **2** : a point of view adopted and held to (made my ~ on the issue clear) **3** **a** : the point or area occupied by a physical object (took her ~ at the head of the line) **b** : a certain arrangement of bodily parts (rose to a standing ~) **4** : a market commitment in securities or commodities; also : the inventory of a market trader **5** **a** : relative place, situation, or standing (is now in a ~ to make decisions on his own) **b** : social or official rank or status **c** : an employment for which one has been hired : JOB (a ~ with a brokerage firm) **d** : a situation that confers advantage or preference

position *vi* **po-si-tion**; **po-si-tion-ing** \pôz-zî-shô\ (1817) : to put in proper position; **also** : LOCATE

po-si-tion-al \pôz-zî-shô-nâl\ *adj* (1571) **1** : of, relating to, or fixed by position (as in astronomy) **2** : involving little movement (as in warfare)

3 : dependent on position or environment or context (the front articulated \k\ in \k\ key and the back-articulated \k\ in \k\ cool are ~ variants) — **po-si-tion-al-ly** *adv*

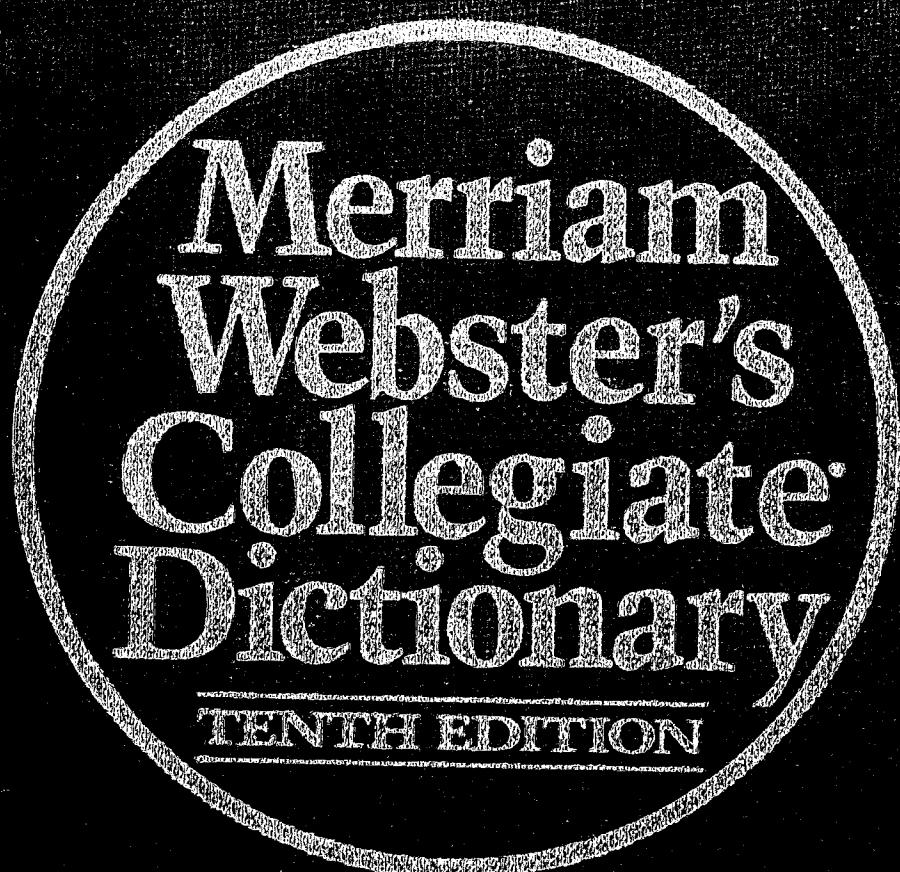
positional notation *n* (1941) : a system of expressing numbers in which the digits are arranged in succession, the position of each digit has a place value, and the number is equal to the sum of the products of each digit by its place value

position effect *n* (1930) : genetic effect that is due to interaction of adjacent genes and that is modified when the spatial relationships of the genes change (as by chromosomal inversion)

position paper *n* (1949) : a detailed report that recommends a course of action on a particular issue

pos-i-tive \pâz-tîv\, 'pâz-tiv\ *adj* [ME, fr. MF *positif*, fr. L *positivus*, fr. *positus*, pp. of *ponere*] (14c) **1** **a** : formally laid down or imposed **b** : PRESCRIBED (as laws) **c** : expressed clearly or peremptorily (her answer was a ~ no) **d** : fully assured : CONFIDENT **2** **a** : of, relating to, or constituting the degree of comparison that is expressed in English by the unmodified and uninflected form of an adjective or adverb and denotes no increase or diminution **b** (1) : independent of changing circumstances : UNCONDITIONED (2) : relating to or constituting a motion or device that is definite, unyielding, constant, or certain in its action (as a system of levers) **c** (1) : INCONTESTABLE (as proof) (2) : UNQUALIFIED (as disgrace) **3** **a** : not fictitious : REAL (as in influence for good in the community) **b** : active and effective in social or economic function rather than merely maintaining peace and order (as in government) **4** **a** : having or expressing actual existence or quality as distinguished from deprivation or deficiency (as in change in temperature); as (1) : capable of being constructively applied (2) : not speculative : EMPIRICAL **b** : having validity of light and shade similar in tone to the tones of the original subject (as a photographic image) **c** : that is or is generated in a direction arbitrarily or customarily taken as that of increase or progression (as rotation of the earth) (we are making some ~ progress) **d** : directed or moving toward a source of stimulation (as a taxic) **e** : real and numerically greater than zero (+2 is a ~ integer) **5** **a** (1) : being, relating to, or charged with electricity of which the proton is the elementary unit and which predominates in a glass body after being rubbed with silk (2) : having more protons than electrons (as an ion) **b** (1) : having higher electric potential and constituting the part from which the current flows to the external circuit (as the ~ terminal of a discharging storage battery) **6** : being an electron-collecting electrode of an electron tube **6** ■

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Library of Congress Cataloging in Publication Data
Main entry under title:

Merriam-Webster's collegiate dictionary. — 10th ed.

p. cm.

ISBN 0-87779-708-0 (unindexed). — ISBN 0-87779-709-9 (indexed).
— ISBN 0-87779-710-2 (deluxe). — ISBN 0-87779-707-2 (laminated cover).

1. English language—Dictionaries.

PE1628.M36 1994

423—dc20

93-32603

CIP

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1152 stellate • step on it

stellate \ste-lät\ *adj* [L *stella*] (1661) : resembling a star (as in shape) *(a ~ leaf)*

Steller's jay \ste-lörz, 'shtē-\ *n* [Georg W. Steller †1746 Ger. naturalist] (1828) : a jay (*Cyanocitta stelleri*) of western No. America with a high crest and black and dark blue plumage

Steller's sea cow *n* (1814) : an extinct very large aquatic sirenian (*Hydrodamalis gigas*) formerly common near the Asian coast of the Bering Sea

stem \stem\ *n* [ME, fr. OE *stefn*, *stemn* stem of a plant or ship; akin to OHG *stam* plant stem and prob. to Gk *stamnos* wine jar, *histanai* to set — more at STAND] (bef. 12c) 1 *a* : the main trunk of a plant; *specif* : a primary plant axis that develops buds and shoots instead of roots *b* : a plant part (as a branch, petiole, or stipe) that supports another (as a leaf or fruit) *c* : the complete fruiting stalk of a banana plant with its bananas 2 *a* : the main upright member at the bow of a ship *b* : the bow or prow of a ship — compare STERN 3 : a line of ancestry *esp* : a fundamental line from which others have arisen 4 : the part of an inflected word that remains unchanged except by phonetic changes or variations throughout an inflection 5 : something held to resemble a plant stem: as *a* : a main or heavy stroke of a letter *b* : the short perpendicular line extending from the head of a musical note *c* : the part of a tobacco pipe from the bowl outward *d* : the cylindrical support of a piece of stemware (as a goblet) *e* : a shaft of a watch used for winding — **from stem to stern** : THROUGHOUT, THOROUGHLY

stem *vt* **stemmed**; **stem-ming** [!stem (of a plant)] *vt* (1724) 1 : to remove the stem from 2 : to make stems for (as artificial flowers) ~ *vi* : to occur or develop as a consequence : have or trace an origin (her success ~s from hard work) *syn* see SPRING — **stem-mer** *n*

stem *vb* **stemmed**; **stem-ming** [!stem (of a plant)] *vt* (1724) 1 : to remove the stem from 2 : to make stems for (as artificial flowers) ~ *vi* : to occur or develop as a consequence : have or trace an origin (her success ~s from hard work) *syn* see SPRING — **stem-mer** *n*

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stem *n* (ca. 1700) 1 : CHECK, DAM 2 : an act or instance of stemming on skis

stem cell *n* (1885) : an unspecialized cell that gives rise to differentiated cells (hematopoietic stem cells in bone marrow)

stem christie, *n*, often *cap C* (1936) : a turn in skiing begun by stemming a ski and completed by bringing the skis parallel into a christie

stem-less \stem-ləs\ *adj* (1796) : having no stem : ACAULENT **stem-ma** \stem-mä\ *n*, *pl* **stem-ma-ta** \-mä-tä\ [L, wreath, pedigree (fr. the wreaths placed on ancestral images), fr. Gk, wreath, fr. *stephein* to crown, enwreath] (1826) 1 : a simple eye present in some insects 2 : a scroll (as among the ancient Romans) containing a genealogical list 3 : a tree showing the relationships of the manuscripts of a literary work — **stem-mat-ic** \ste-mä-tik, sta-\ *adj*

stemmed \stemd\ *adj* (1576) : having a stem — usu. used in combination (long-stemmed roses)

stem-my \ste-mē\ *adj* **stem-mi-er**; **-est** (1863) : abounding in stems

stem rust *n* (1899) 1 : a rust attacking the stem of a plant; *esp* : a destructive disease esp. of wheat caused by a rust fungus (*Puccinia graminis*) which produces reddish brown lesions in the uredospore stage and black lesions in the teliospore stage and has any of several plants of the barberry family as an intermediate host 2 : the fungus causing stem rust

stem turn *n* (1922) : a skiing turn executed by stemming an outside ski

stem-ware \stem-war, -war\ *n* (1926) : glass hollowware mounted on a stem

stem-wind-er \-win-dər\ *n* (1875) 1 : a stem-winding watch 2 [fr. the superiority of the stem-winding watch over the older key-wound watch] : one that is first-rate of its kind; *esp* : a stirring speech turned by the knurled knob at the outside end of the stem (a ~ watch)

Sten \sten\ *n* [R. V. Sheppard, 20th cent. Eng. army officer + H. J. Turpin, 20th cent. Eng. civil servant + England] (1942) : a light simple 9-millimeter British submachine gun

stem- or steno- *comb form* [Gk, fr. *stenos*] : close : narrow : little (stenobathic)

stench \stench\ *n* [ME, fr. OE *stenc*; akin to OE *stincan* to emit a smell — more at STINK] (bef. 12c) : STINK — **stench-ful** \-fəl\ *adj* — **stenchy** \sten-chē\ *adj*

stencil \sten-sil\ *n* [ME *stanselen* to ornament with sparkling colors, fr. MF *estanceler*, fr. *estancele* spark, fr. (assumed) VL *scintilla*, alter. of L *scintilla*] (1707) 1 : an impervious material (as a sheet of paper, thin wax, or woven fabric) perforated with lettering or a design through which a substance (as ink, paint, or metallic powder) is forced onto a surface to be printed 2 : something (as a pattern, design, or print) that is produced by means of a stencil 3 : a printing process that uses a stencil

stencil *vt* **sten-ciled** or **sten-cilled**; **sten-cil-ing** or **sten-cil-ling** \-sən-sil-ing\ (ca. 1828) 1 : to mark or paint with a stencil 2 : to produce by stencil — **sten-cil-er** or **sten-cil-ler** \-sən-sil-ər\ *n*

steno- \ste-nō\ *n*, *pl* **steno-s** (1913) 1 : STENOGRAPHER 2 : STENOGRAPHY

steno-bath-ic \ste-nō-'ba-thik\ *adj* [sten- + Gk *bathos* depth] (1902) of a pelagic organism : living within narrow limits of depth

ste-nog-ra-pher \sta-'nä-grä-fər\ *n* (1809) 1 : a writer of shorthand 2 : a person employed chiefly to take and transcribe dictation

ste-nog-ra-phy \-fē\ *n* (1602) 1 : the art or process of writing in shorthand 2 : shorthand esp. written from dictation or oral discourse 3 : the making of shorthand notes and subsequent transcription of them — **steno-graph-ic** \ste-nä-'gra-fik\ *adj* — **steno-graph-i-cally** \-fi-kə-'lē\ *adv*

steno-ha-line \ste-nō-'hä-lin, -'ha-lin\ *adj* [ISV *sten-* + Gk *halinos* of salt, fr. *hal-* salt — more at SALT] (ca. 1920) of an aquatic organism : unable to withstand wide variation in salinity of the surrounding water

ste-nosed \ste-nōzd, -'nōst\ *adj* [fr. pp. of *stenose* to affect with stenosis] (1897) : affected with stenosis

ste-no-sis \ste-nō-'səs\ *n*, *pl* **no-ses** \-sēz\ [NL, fr. Gk *stenōsis* act of narrowing, fr. *stenoun* to narrow, fr. *stenos* narrow] (ca. 1860) : a narrowing or constriction of the diameter of a bodily passage or orifice — **ste-not-ic** \-nā-tik\ *adj*

ste-no-ther-mal \ste-nō-'ther-məl\ *adj* (1881) : capable of surviving over only a narrow range of temperatures (~ fish) — **steno-therm** \ste-nō-'ther-mərm\ *n*

steno-top-ic \ste-nō-'tä-pik\ *adj* [prob. fr. G *stenotop* stenotopic, fr. *sten-* + Gk *topos* place] (1945) : having a narrow range of adaptability to changes in environmental conditions

steno-type \ste-nō-'tip\ *n* [steno- (as in stenography) + type] (1922) : a small machine somewhat like a typewriter used to record speech by means of phonograms — **steno-type** *vt* — **steno-typ-ist** \-ti-pist\ *n*

sten-tor \sten-tör, -tar\ *n* [L, fr. Gk *Stentor* Stentor, a Greek herald in the Trojan War noted for his loud voice] (1609) 1 : a person having a loud voice 2 : any of a widely distributed genus (*Stentor*) of ciliate protozoans having a trumpet-shaped body with the mouth at the broad end and with the narrow end often attached to the substrate

sten-to-ri-an \sten-tör-ē-ən, -'tōr-\ *adj* (1605) : extremely loud *syn* see LOUD

step \step\ *n* [ME, fr. OE *stæpe*; akin to OHG *stapfo* step, *stampfō* to stamp] (bef. 12c) 1 : a rest for the foot in ascending or descending: as *a* : one of a series of structures consisting of a riser and a tread *b* : a ladder rung 2 *a* : (1) : an advance or movement made by raising the foot and bringing it down elsewhere (2) : a combination of foot or foot and body movements constituting a unit or a repeated pattern (a dance ~) (3) : manner of walking : STRIDE *b* : FOOTPRINT 1 *c* : the sound of a footstep (heard ~s in the hall) 3 *a* : the space passed over in one step *b* : a short distance (just a ~ away from the bank) *c* : the height of one stair 4 *pl* : COURSE, WAY (directed his ~s toward the river) 5 *a* : a degree, grade, or rank in a scale *b* : a stage in a process (was guided through every ~ of my career) 6 : a frame on a ship designed to receive an upright shaft; *esp* : a block supporting the heel of a mast 7 : an action, proceeding, or measure often occurring as one in a series (taking ~s to improve the situation) 8 : a steplike offset or part usu. occurring in a series 9 : an interval in a musical scale — **step-like** \-līk\ *adj* — **stepped** \stept\ *adj* — **in step** *1* : with each foot moving to the same time as the corresponding foot of others or in time to music *2* : in harmony or agreement — **out of step** : not in step (out of step with the times)

step *vb* **stepped**; **step-ping** *vi* (bef. 12c) 1 *a* : to move by raising the foot and bringing it down elsewhere or by moving each foot in succession *b* : DANCE 2 *a* : to go on foot : WALK *b* *obs* : ADVANCE, PROCEDE *c* : to be on one's way : LEAVE — often used with *along* *d* : to move briskly (kept us stepping) 3 : to press down with the foot (~ on the brake) 4 : to come as if at a single step (stepped into a good job) ~ *vi* 1 : to take by moving the feet in succession (~ three paces). 2 *a* : to move (the foot) in any direction : SET (the first man to ~ foot on the moon) *b* : to traverse on foot 3 : to go through the steps of : PERFORMANCE (~ a minut) 4 : to make erect by fixing the lower end in a step (~ the mast) 5 : to measure by steps (~ off 50 yards) 6 *a* : to provide with steps *b* : to make steps in (~ a key) 7 : to construct or arrange in or as if in steps (craggy peaks with terraces stepped up the sides — *Time*) — **step on it** : to increase one's speed : hurry up

step-comb form [ME, fr. OE *stēop*; akin to OHG *stiaf* step-, OE *astēp* to deprive, bereave] : related by virtue of a remarriage (as of a parent) and not by blood (stepparent) (stepsister)

step-broth-er \step-,brä-thər\ *n* (15c) : a son of one's stepparent by a former marriage

step-by-step \step-bi-'step\ *adj* or *adv* (1701) : marked by successive degrees usu. of limited extent : GRADUAL

step-child \step-'child\ *n* (bef. 12c) 1 : a child of one's wife or husband by a former marriage 2 : one that fails to receive proper care or attention (is no longer a ~ in the family of nations —F. R. Smith)

step-dance *n* (1887) : a dance in which steps are emphasized rather than gesture or posture

step-daugh-ter \step-,dō-tər\ *n* (bef. 12c) : a daughter of one's wife or husband by a former marriage

step-down \step-dōw'n\ *n* (1922) : a decrease or reduction in size or amount (~ in dosage)

step down *vi* (1890) : RETIRE, RESIGN ~ *vi* 1 : to lower (a voltage) by means of a transformer 2 : to decrease or reduce esp. by one or more steps — **step-down** \step-dōw'n\ *adj*

step-fam-ily \step-,fam-lē, -fā-mē\ *n* (1966) : a family in which there is a stepparent

step-fa-ther \step-,fā-thər\ *n* (bef. 12c) : the husband of one's mother by subsequent marriage

step function *n* (ca. 1929) : a mathematical function of a single real variable that remains constant within each of a series of adjacent intervals but changes in value from one interval to the next

steph-a-no-tis \ste-fō-'nō-təs\ *n* [NL, fr. Gk

stephanōtis fit for a crown, fr. *stephanos* crown, fr. *stephein* to crown] (1843) : any of a genus (*Stephanotis* and esp. *S. floribunda*) of Old World tropical woody vines of the milkweed family with fragrant white flowers the corolla of which has a cylindrical dilated tube and spreading limb

step-in \step-in\ *n* (1921) : an article of clothing put on by being stepped into: as *a* : a shoe resembling but usu. having a higher vamp than a pump and concealed elastic to adjust the fit *b* : short panties for women — usu. used in pl. — **step-in** *adj*

step in *vi* (15c) 1 : to intervene in an affair or dispute 2 : to make a brief informal visit

step-lad-der \step-,la-dər\ *n* (1751) : a ladder that has broad flat steps and two pairs of legs connected by a hinge at the top and that opens at the bottom to become freestanding

step-moth-er \ste-mä-thər\ *n* (bef. 12c) : the wife of one's father by a subsequent marriage

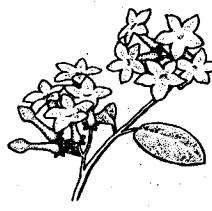
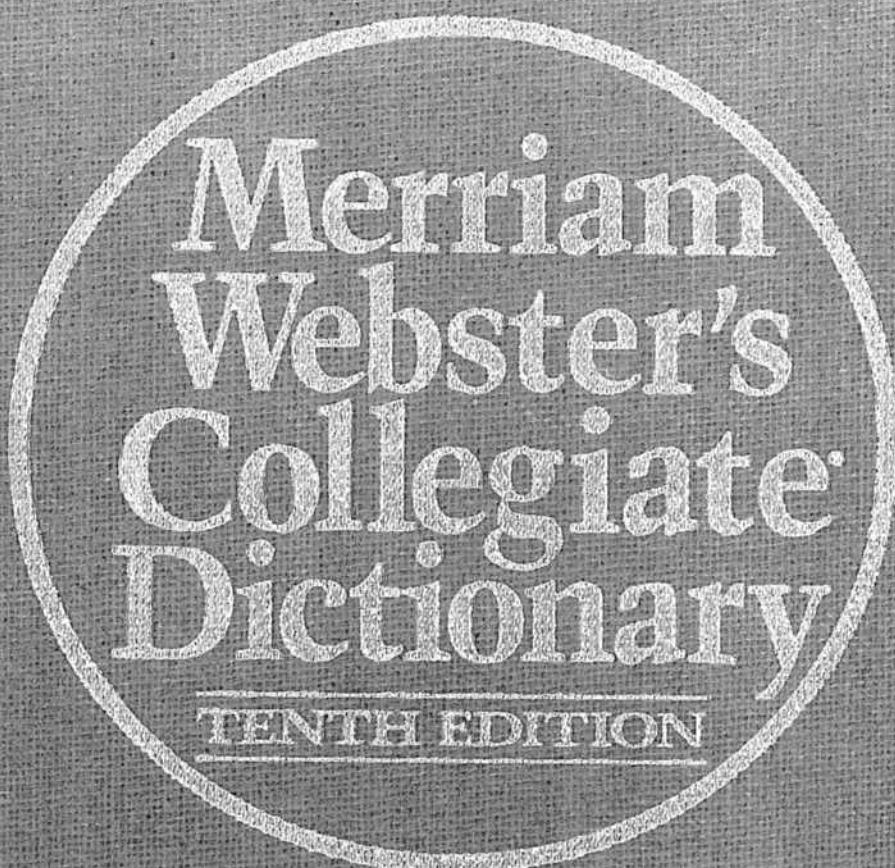


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Library of Congress Cataloging in Publication Data
Main entry under title:

Merriam-Webster's collegiate dictionary. — 10th ed.

p. cm.

ISBN 0-87779-708-0 (unindexed). — ISBN 0-87779-709-9 (indexed).
— ISBN 0-87779-710-2 (deluxe). — ISBN 0-87779-707-2 (laminated cover).
1. English language—Dictionaries.

PE1628.M36 1994
423—dc20

93-32603
CIP

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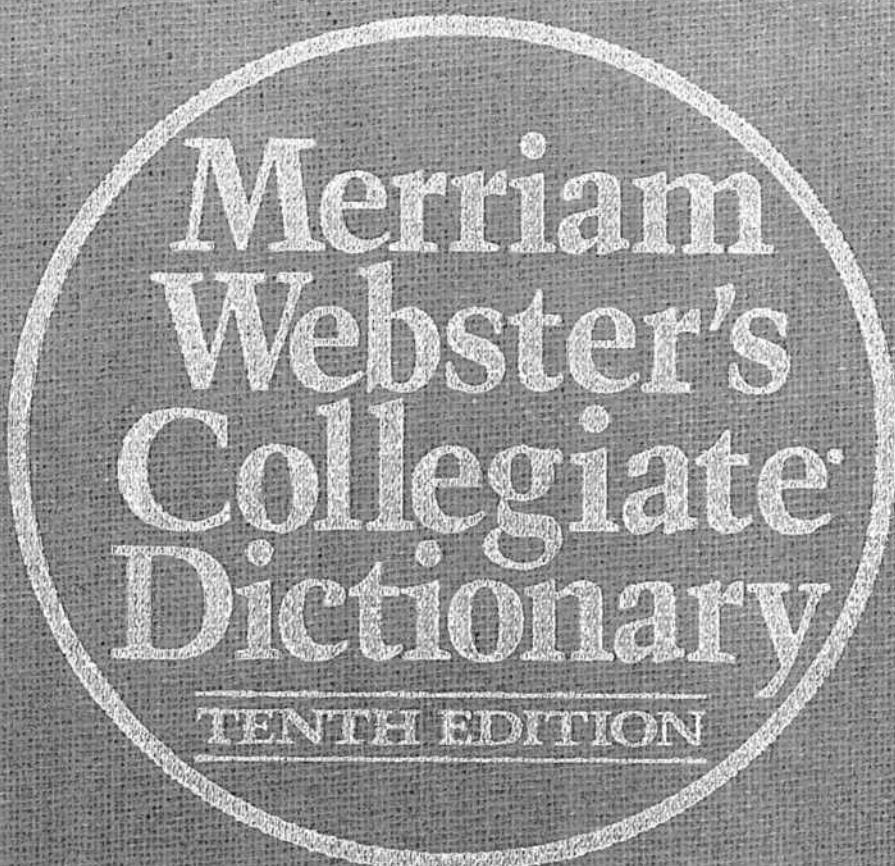
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as-sas-si-nate \ə'-sa-s'ə-nāt\ vt -nat-ed; -nat-ing (1607) 1: to injure or destroy unexpectedly and treacherously 2: to murder by sudden or secret attack usu. for impersonal reasons *syn* see KILL — **as-sas-si-na-tion** \ə'-sa-s'ə-nā-shən\ n — **as-sas-si-na-tor** \ə'-sa-s'ə-nā-tər\ n **assassin bug** n (1895) : any of a family (Reduviidae) of bugs that are usu. predatory on insects though some (as a conenose) suck the blood of mammals — called also *reduviid*

assault \ə'-sôlt\ n [ME *assaut*, fr. OF, fr. (assumed) VL *assaltus*, fr. *assalire*] (14c) 1 a: a violent physical or verbal attack b: a military attack usu. involving direct combat with enemy forces c: a concerted effort (as to reach a goal or defeat an adversary) 2 a: a threat or attempt to inflict offensive physical contact or bodily harm on a person (as by lifting a fist in a threatening manner) that puts the person in immediate danger of or in apprehension of such harm or contact — compare BATTERY 1b b: *RAPE*

assault vt (15c) 1: to make an assault on 2: *RAPE* ~ vi: to make an assault *syn* see ATTACK — **as-sault-er** n — **as-sault-ive** \'-sôltiv\ adj — **as-saul-tive-ly** adv — **as-saul-tive-ness** n

assault boat n (1941) : a small portable boat used in an amphibious military attack or in land warfare for crossing rivers or lakes

assault rifle n (1975) : any of various automatic or semiautomatic rifles designed for military use with large capacity magazines

as-say \ə'-sā, 'a-sā\ vt (14c) 1: TRY, ATTEMPT 2 a: to analyze (as an ore) for one or more specific components b: to judge the worth of : ESTIMATE ~ vi: to prove up in an assay — **as-say-er** n

assed \əst\ adj (1932) : *ASS* — used in combination (smart-assed); often considered vulgar

asse-gai or **as-sa-gai** \ə'-sē-gāl\ n [ultim. fr. Ar *az-zaghāya* the assegai, fr. *al-* the + *zaghāya* assegai] (1600) : a slender hardwood spear or light javelin usu. tipped with iron and used in southern Africa

assem-blage \ə'-sem-blāj, for 3 also \ə'-sām'-blāzh\ n (1690) 1: a collection of persons or things: GATHERING 2: the act of assembling; the state of being assembled 3 a: an artistic composition made from scraps, junk, and odds and ends (as of paper, cloth, wood, stone, or metal) b: the art of making assemblages

as-sem-blag-ist \ə'-bli-jist, '-blā-zhīst\ n (1965) : an artist who specializes in assemblages

as-sem-ble \ə'-sem-bəl\ vb **as-sem-bled**; **as-sem-blung** \ə'-bələng\ [ME, fr. OF *assembler*, fr. (assumed) VL *assimulare*, fr. L *ad-* + *simul* together — more at SAME] vt (13c) 1: to bring together (as in particular place or for a particular purpose) 2: to fit together the parts of ~ vi: to meet together: CONVENE *syn* see GATHER

as-sem-bler \ə'-bli-jər\ n (1635) 1: one that assembles 2 a: a computer program that automatically converts instructions written in assembly language into machine language b: ASSEMBLY LANGUAGE

as-sem-bly \ə'-sem-blē\ n, pl -blies [ME *assemblee*, fr. MF, fr. OF, fr. *assemble*] (14c) 1: a company of persons gathered for deliberation and legislation, worship, or entertainment 2 cap: a legislative body; specif: the lower house of a legislature 3: ASSEMBLAGE 1, 2 4: a signal for troops to assemble or fall in 5 a: the fitting together of manufactured parts into a complete machine, structure, or unit of a machine b: a collection of parts so assembled 6: the translation of assembly language to machine language by an assembler

assembly language n (ca. 1964) : a programming language that consists of instructions that are mnemonic codes for corresponding machine language instructions

assembly line n (1914) 1: an arrangement of machines, equipment, and workers in which work passes from operation to operation in direct line until the product is assembled 2: a process for turning out a finished product in a mechanically efficient manner (academic *assembly lines*)

as-sem-bléy-man \ə'-sem-blé-mən\ n (1647) : a member of an assembly

Assembly of God (1952) : a congregation belonging to a Pentecostal body founded in the U.S. in 1914

as-sem-bléy-wom-an \ə'-wū-mən\ n (1969) : a woman who is a member of an assembly

as-sent \ə'-sent, a-\ vi [ME, fr. OF *assenter*, fr. L *assentari*, fr. *assentire*, fr. *ad-* + *sentire* to feel — more at SENSE] (14c) : to agree to something esp. after thoughtful consideration: CONCUR — **as-sen-tor** or **as-sen-ter** \ə'-sen-tər\ n

syn ASSENT, CONSENT, ACCEDE, ACQUIESCE, AGREE, SUBSCRIBE mean to concur with what has been proposed. ASSENT implies an act involving the understanding or judgment and applies to propositions or opinions (voters *assented* to the proposal). CONSENT involves the will or feelings and indicates compliance with what is requested or desired (consented to their daughter's going). ACCEDE implies a yielding, often under pressure, of assent or consent (officials *acceded* to the prisoners' demands). ACQUIESCE implies tacit acceptance or forbearance of opposition (*acquiesced* to his boss's wishes). AGREE sometimes implies previous difference of opinion or attempts at persuasion (finally *agreed* to come along). SUBSCRIBE implies not only consent or assent but hearty approval and active support (subscribes wholeheartedly to the idea).

assent n (14c) : an act of assenting: ACQUIESCE, AGREEMENT

as-sen-ta-tion \ə'-sa-nə-tā-shən, \ə'-sen-\ n (15c) : ready assent esp. when insincere or obsequious

as-assert \ə'-sərt, a-\ vt [L *assertus*, pp. of *asserere*, fr. *ad-* + *serere* to join — more at SERIES] (ca. 1604) 1: to state or declare positively and often forcefully or aggressively 2 a: to demonstrate the existence of (~ his manhood —James Joyce) b: POSIT, POSTULATE — **assert one-self**: to compel recognition esp. of one's rights

syn ASSERT, DECLARE, AFFIRM, PROTEST, AVOW mean to state positively usu. in anticipation of denial or objection. ASSERT implies stating confidently without need for proof or regard for evidence (*asserted* that modern music is just noise). DECLARE stresses open or public statement (*declared* her support for the candidate). AFFIRM implies conviction based on evidence, experience, or faith (*affirmed* the existence of an afterlife). PROTEST emphasizes affirming in the face of denial or doubt (*protested* that he really had been misquoted). AVOW stresses

frank declaration and acknowledgment of personal responsibility for what is declared (*avowed* that all investors would be repaid in full).

syn see in addition MAINTAIN

as-sert-ed-ly \ə'-sər-təd-lē, a-\ adj (1937) : by positive and usu. unsubstantiated assertion: ALLEGEDLY

as-ser-tion \ə'-sər-shən, a-\ n (15c) : the act of asserting; also: DECLARATION, AFFIRMATION

as-ser-tive \ə'-sər-tiv, a-\ adj (ca. 1619) 1: disposed to or characterized by bold or confident assertion 2: having a strong or distinctive flavor or aroma (~ wines) *syn* see AGGRESSIVE — **as-ser-tive-ly** adv — **as-ser-tive-ness** n

assertiveness training n (1975) : a method of training individuals to act in a bold self-confident manner

asses pl of *AS* or *ASS*

assess \ə'-ses, a-\ vt [ME, prob. fr. ML *assessus*, pp. of *assidere*, fr. L, to sit beside, assist in the office of a judge — more at ASSIZE] (15c) 1: to determine the rate or amount of (as a tax) 2 a: to impose (as a tax) according to an established rate b: to subject to a tax, charge, or levy 3: to make an official valuation of (property) for the purposes of taxation 4: to determine the importance, size, or value of 5: to charge (a player or team) with a foul or penalty *syn* see ESTIMATE — **as-sess-able** \'-se-sə-bəl\ adj

as-sess-ment \ə'-ses-mənt, a-\ n (1534) 1: the action or an instance of assessing: APPRAISAL 2: the amount assessed

as-ses-sor \ə'-ses-sər\ n (14c) 1: an official who assists a judge or magistrate 2: one that assesses; esp: an official who assesses property for taxation

as-set \ə'-set \ə'-sət\ n [back-formation fr. assets, sing., sufficient property to pay debts and legacies, fr. AF *asetz*, fr. OF *assez* enough, fr. (assumed) VL *ad satis*, fr. L *ad* to + *satis* enough — more at AT, SAD] (1531) 1 pl a: the property of a deceased person subject by law to the payment of his or her debts and legacies b: the entire property of a person, association, corporation, or estate applicable or subject to the payment of debts 2: ADVANTAGE, RESOURCE (his wit is his chief ~) 3 a: an item of value owned b pl: the items on a balance sheet showing the book value of property owned

as-sever-ate \ə'-se-vər, rāt\ vt -at-ed; -at-ing [L *asseveratus*, pp. of *asseverare*, fr. *ad-* + *severus* severe] (1791) : to affirm or aver positively or earnestly — **as-sev-er-a-tion** \'-se-və-rā-shən\ n — **as-sev-er-a-tive** \'-se-və-rā-tiv\ adj

ass-hole \ə'-sə-(h)əl\ n (14c) 1: ANUS — usu. considered vulgar 2 a: a stupid, incompetent, or detestable person — usu. considered vulgar b: a despicable place — usu. used in the phrase *asshole of the universe*; usu. considered vulgar

as-si-du-it-y \ə'-sə-dū'-də-tē, -'dū-ə-tē\ n, pl -ties (1596) 1: the quality or state of being assiduous: DILIGENCE 2: persistent personal attention — usu. used in pl.

as-sid-u-ous \ə'-sīj-wəs, -'sī-jə-\ adj [L *assiduus*, fr. *assidere*] (1660) : marked by careful unremitting attention or persistent application (an ~ book collector) (tended her garden with ~ attention) *syn* see BUSY — **as-sid-u-ous-ly** adv — **as-sid-u-ous-ness** n

assign \ə'-sīn\ vt [ME, fr. OF *assigner*, fr. L *assignare*, fr. *ad-* + *signare* to mark, fr. *signum* mark, sign] (13c) 1: to transfer (property) to another esp. in trust or for the benefit of creditors 2 a: to appoint to a post or duty (~ed them to light duty) (~ed me two clerks) b: to appoint as a duty or task (~ed 20 pages for homework) 3: to fix or specify in correspondence or relationship (~ counsel to the defendant) (~ a value to the variable) 4 a: to ascribe as a motive, reason, or cause esp. after deliberation b: to consider to belong to (a specified period of time) *syn* see AScribe — **as-sign-ability** \'-sī-nā'-bi-lə-tē\ n — **as-sign-able** \'-sī-nā'-bəl\ adj — **as-sign-er** \'-sī-nər\ or **as-sign-er** \'-sī-nər\ or **as-sign-er** \'-sī-nər\

assign n (15c) : ASSIGNEE 3 (heirs and ~s)

as-si-gnat \ə'-sī-nāt'-yā, 'a-sig-nāt\ n [F, fr. L *assignatus*, pp. of *assignare*] (1790) : a bill issued by the French Revolutionary government (1789–96) on the security of expropriated lands

as-sig-na-tion \'-sī-nā'-shən\ n (15c) 1: the act of assigning or the assignment made 2: an appointment of time and place for a meeting; esp: TRYST (returned from an ~ with his mistress —W. B. Yeats)

assigned risk n (1946) : a poor risk (as an accident-prone motorist) that insurance companies would normally reject but are forced to insure by state law

as-sign-ee \'-sī-sə-nē, 'a-sī-\ n (14c) 1: a person to whom an assignment is made 2: a person appointed to act for another 3: a person to whom a right or property is legally transferred

as-sign-ment \'-sī-nā-mēnt\ n (14c) 1: the act of assigning 2 a: a position, post, or office to which one is assigned b: a specified task or amount of work assigned or undertaken as if assigned by authority 3: the transfer of property; esp: the transfer of property to be held in trust or to be used for the benefit of creditors *syn* see TASK

as-sim-i-la-ble \'-sī-mə-lə-bəl\ adj (1667) : capable of being assimilated — **as-sim-i-la-bil-i-ty** \'-sī-mə-lə-bəl-tē\ n

as-sim-i-late \'-sī-mə-lāt\ vt -lat-ed; -lat-ing [ME, fr. ML *assimilatus*, pp. of *assimilare*, fr. L *assimilare* to make similar, fr. *ad-* + *similare* to make similar, simulate] vt (15c) 1 a: to take in and appropriate as nourishment: absorb into the system b: to take into the mind and thoroughly comprehend 2 a: to make similar b: to alter by assimilation c: to absorb into the culture or mores of a population or group 3: COMPARE, LIKEN ~ vi: to become assimilated — **as-sim-i-la-tor** \'-sī-tōr\ n

usage When assimilate is followed by a preposition, transitive senses 2a and 2c commonly take to and into and less frequently with; 2b regularly takes to; sense 3 most often takes to and sometimes with. The most frequent prepositions used with the intransitive sense are to and into.

as-sim-i-late \'-sī-mə-lāt\ n (1935) : something that is assimilated

as-sim-i-la-tion \'-sī-mə-lā-shən\ n (15c) 1 a: an act, process, or

\ə\ abut \ə\ kitten, F table \ə\ further \ə\ ash \ə\ ace \ə\ mop, mar \ə\ out. \ch\ chin \ə\ bet \ə\ easy \g\ go \i\ hit \i\ ice \i\ job \i\ sing \ə\ go \i\ law \i\ boy \i\ thin \i\ the \i\ loot \i\ foot \i\ yet \i\ zh\ vision \i\ k, \i\ c, \i\ ce, \i\ ue, \i\ ie \i\ see Guide to Pronunciation

EXHIBIT L-16

Ex. L-16
CMO US PATENT No. 7,101,069

INDEX OF DISPUTED TERMS

<u>CLAIM TERMS</u>	<u>PAGE</u>
a fitting portion	1
comprises two side walls extending upwardly and separately.....	1
has two side walls extending upwardly and separately	1

EXHIBIT L-16
U.S. PATENT NO. 7,101,069
TERMS IN DISPUTE

ASSERTED CLAIM 1

1. A direct backlight module, comprising:
 a diffuser;
 a reflecting plate disposed under the diffuser;
 an illumination tube disposed between the diffuser and the reflecting plate; and
 a support disposed between the diffuser and the reflecting plate, the support having a fitting portion, wherein:
 the fitting portion comprises two side walls extending upwardly and separately;
 the illumination tube is disposed in the fitting portion and between the side walls, and
 at least one of the side walls extends toward and beyond the top of the illumination tube for preventing bending of the diffuser.

LGD's Claim Construction

a fitting portion - the portion of the support designed to hold an illumination tube

ASSERTED CLAIM 16

16. A direct backlight module, comprising:
 a diffuser;
 a reflecting plate disposed under the diffuser;
 an illumination tube disposed between the diffuser and the reflecting plate; and
 a support disposed between the diffuser and the reflecting plate, the support having a fitting portion, wherein:
 the fitting portion has two side walls extending upwardly and separately;
 the illumination tube is disposed in the fitting portion and between the side walls, and
 at least one of the side walls extends toward and beyond the top of the illumination tube for preventing bending of the diffuser.

comprises two side walls extending upwardly and separately – includes two upright structures that are spaced apart and that are designed to hold the illumination tube

has two side walls extending upwardly and separately – has two upright structures that are spaced apart and that are designed to hold the illumination tube

INTRINSIC EVIDENCE FOR DISPUTED TERMS:

Consequently, the invention provides a direct backlight module supporting the diffuser and the illumination tubes simultaneously. The diffuser and illumination tubes are not bent and deformed due to insufficient rigidity thereof even when the LCD panel or the diffuser is large. Further, the diffuser and the illumination tubes are not deformed due to thermal expansion and contraction even when the direct backlight module works for a long period of time. Thus, the optical character of the direct backlight module is not deteriorated.

1:43-53

An object of the invention is to provide a direct backlight module. The direct backlight module comprises a diffuser; a reflecting plate disposed under the diffuser; an illumination tube disposed between the diffuser and the reflecting plate; and a support disposed on the reflecting plate and between the diffuser and the reflecting plate for supporting the diffuser and the illumination tube simultaneously, wherein the support has a fitting portion into which the illumination tube directly fits.

1:57-65

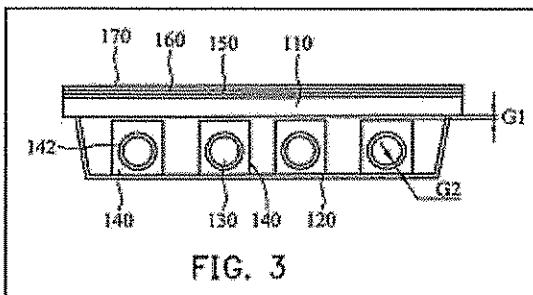


FIG. 3

As shown in FIG. 3 and FIG. 4, the support 140 supports the diffuser 110 and the illumination tube 130 simultaneously. Additionally, the support 140 has a fitting portion 142 into which the illumination tube 130 directly fits. Thus, the illumination tube 130 is supported by the support 140.

2:38-43

INTRINSIC EVIDENCE FOR DISPUTED TERMS (cont'd):

In this embodiment, the support 140 is disposed on the reflecting plate 120 and has a rectangular shape. The height of the support 140 is substantially equal to the distance between the diffuser 110 and the reflecting plate 120. The support 140 supports the diffuser 110. Further, the first minor gap G1 between the support 140 and the diffuser 110 protects the diffuser 110 from deformation due to thermal expansion and contraction of the support 140. In addition, the fitting portion 142 is a circular hole for accommodating the illumination tube 130. The diameter of the fitting portion 142 is substantially equal to that of the illumination tube 130. Further, the second minor gap G2 between the fitting portion 142 of the support 140 and the illumination tube 130

~

protects the illumination tube 130 from deformation due to thermal expansion and contraction of the support 140.

Additionally, the reflecting plate 120 has a groove 122 and

2:55-3:3

The support 140, the fitting portion 142 and the engaging portion 144 of the invention can have many configurations, and the shape of the groove 122 of the reflecting plate 120 can be changed according to the shape of the engaging portion 144 of the support 140, as shown in FIGS. 5A, 5B, 5C, 5D, 5E, 5F and 5G.

3:9-14

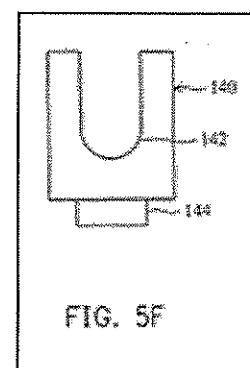
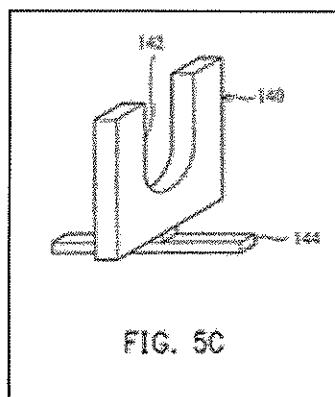
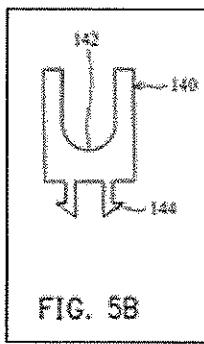


EXHIBIT L-17

Ex. L-17
CMO US PATENT No. 6,976,781

INDEX OF DISPUTED TERMS

<u>CLAIM TERMS</u>	<u>PAGE</u>
on outer surfaces of said first edge a plurality of first hooks are formed to protrude outwardly	1
hooks	1
on outer surfaces of said second sidewall a plurality of second hooks are formed to protrude outwardly	9
as said frame is mounted onto said bezel	15
bezel	15
on outside surfaces of said first edge first hooks are formed to protrude outwardly	5
on outside surfaces of said fourth edge second hooks are formed to protrude outwardly	5
on outer surfaces of said second sidewall a plurality of first hooks are formed to protrude outwardly	
on outer surfaces of said first edge a plurality of second hooks are formed to protrude outwardly	9
simultaneously said second edge is disposed onto outside surfaces of said second sidewall, and said first hooks are inserted and engaged in said second holes for fastening said frame and said bezel	9

EXHIBIT L-17
U.S. PATENT NO. 6,976,781
TERMS IN DISPUTE

ASSERTED CLAIM 1

1. An assembling structure of a backlight module for containing and fabricating components of said backlight module, said assembling structure comprising:
a frame, having a first edge and a second edge, wherein on outer surfaces of said first edge a plurality of first hooks are formed to protrude outwardly, and on outer surfaces of said second edge a plurality of first holes are formed;
a bezel, made of metal material, having a first sidewall and a second sidewall, wherein on said first sidewall a plurality of second holes are formed, and on outer surfaces of said second sidewall a plurality of second hooks are formed to protrude outwardly;
wherein said first edge is disposed onto inside surfaces of said first sidewall, said first hooks are inserted and engaged in said second holes, said second edge is disposed onto outside surfaces of said second sidewall, and said second hooks are inserted and engaged in said first holes as said frame is mounted onto said bezel.

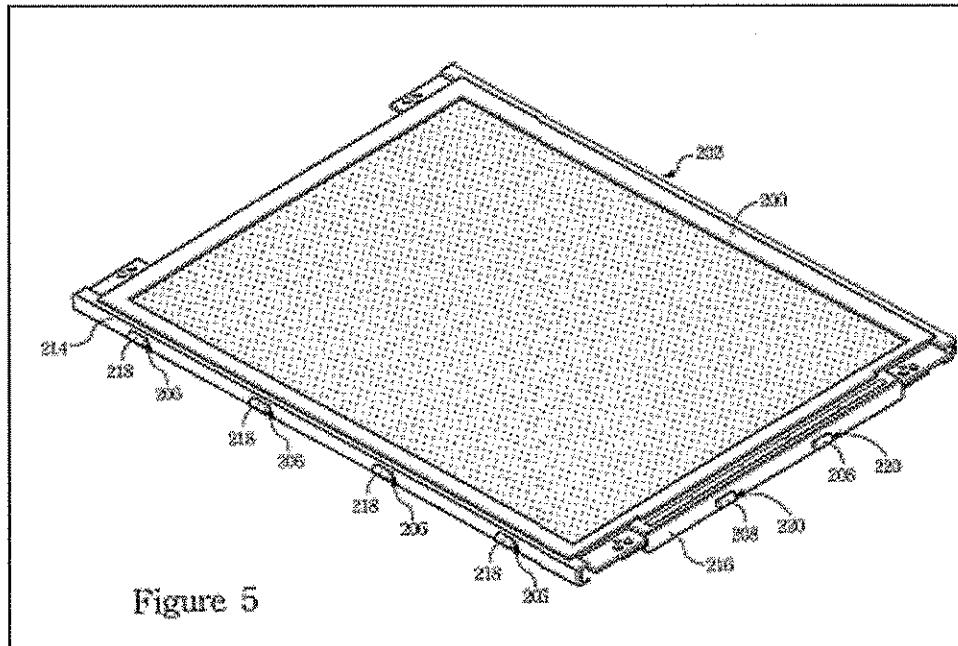
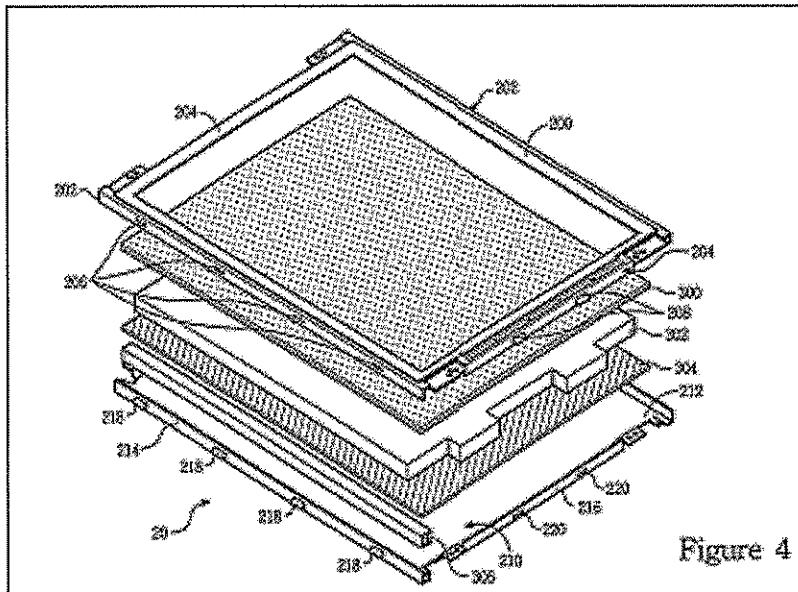
LGD's Claim Construction

on outer surfaces of said first edge a plurality of first hooks are formed to protrude outwardly - two or more protrusions that are part of the frame and that extend outwardly from the first edge for fastening the frame to the bezel

hooks¹ - two or more protrusions that are part of the frame and that extend outwardly from the first edge for fastening the frame to the bezel

¹ Disputed Term "hooks" also appears in asserted Claim 6 and Claim 8 in the same context.

INTRINSIC EVIDENCE FOR DISPUTED TERMS “ON OUTER SURFACES OF SAID FIRST EDGE A PLURALITY OF FIRST HOOKS ARE FORMED TO PROTRUDE OUTWARDLY” AND “HOOKS”:



INTRINSIC EVIDENCE FOR DISPUTED TERMS “ON OUTER SURFACES OF SAID FIRST EDGE A PLURALITY OF FIRST HOOKS ARE FORMED TO PROTRUDE OUTWARDLY” AND “HOOKS” (con’t.):

elastic, the operator can disassemble the frame 108 from the bezel 110 easily just by pressing back slightly the hooks 110a of the bezel 110 and simultaneously pulling the edges of the frame 108. Even though such assembling manner has the advantage of easy disassembling, however, the structure strength of the backlight unit is worse due to the resin frame 108 is pliable.

2:1-5

bezel 111 made of metal material is too hard, it is difficult to disassemble the frame 109 from the bezel 111. The operators have to exert themselves to reject the hooks back and extract the frame 109 from the bezel 111. Apparently, such assembling design will increase the degree of difficulty in reassembling procedures. Under these conditions, the manufac-

2:15-20

gular board 212 respectively. On outer surfaces of each long sidewall 214 a plurality of hooks 218 are formed and protruding outwardly. And on each short sidewall 216 a plurality of holes 220 are formed.

3:18-21

sidewalls 214 of the bezel 210. Namely, the long sidewall 214 is covered by the edge 202. And the hooks 218 on the outer surfaces of the long sidewall 214 are inserted and engaged in the holes 206 of the long edge 202 to fasten the frame 200 onto the bezel 210. In the mean time, the short edge 204 is disposed and attached onto the inside surfaces of the short sidewall 216 of the bezel 210, and the hooks 208 on the outside surfaces of the short edge 204 are inserted and engaged in the holes 220 of the short sidewall 216 to fasten the frame 200 and the bezel 210, as shown in FIG. 5.

3:33-42

sidewall 216 can reinforce the structure strength of the backlight unit. At the same time, because the long edges 202 of the frame 200 are attached to the outside of the long sidewalls 214 of the bezel 210, the frame 200 can be disassembled from the bezel 210 very easily by pressing slightly the hooks 218 of the bezel 210 and pulling the long edges 202 of the frame 200.

It is noted that in the above embodiment, the long edges 202 of the frame 200 are formed with the holes 206, and the

3:48-56

INTRINSIC EVIDENCE FOR DISPUTED TERMS “ON OUTER SURFACES OF SAID FIRST EDGE A PLURALITY OF FIRST HOOKS ARE FORMED TO PROTRUDE OUTWARDLY” AND “HOOKS” (con’t.):

Besides, in a further embodiment, only one edge of the rectangular frame is fabricated with holes and the others (the three edges) are fabricated with protruding hooks. Certainly, in this design, only one sidewall of the bezel is fabricated with hooks, and the others are fabricated with holes for fastening the frame and the bezel.

It is noted that in most backlight units the tubular lamp of the backlight unit is disposed on the inside of one long

4:1-8

Relatively, as shown in Fig. 4, in the present invention, the rectangular frame (200) has two opposite edges formed with holes and other two opposite edges formed with hooks, and the rectangular bezel (210) has two opposite sidewalls thereof formed with hooks and other two opposite sidewalls formed with holes.

1/28/05 Response, page 14

The present invention does not just combine a very flexible and elastic frame that is also structurally weak frame with a hard and difficult to disassemble bezel that is structurally strong. Referring to Figures 4-5 and the specification, the key point of the assembling structure of the present invention is to have two opposite long edges (202) of the rectangular frame (200) attach to an outside of the long sidewalls (214) of the bezel (210), and simultaneously to have two opposite short edges (204) of the rectangular frame (200) attach to an inside of the short sidewalls (216) of the bezel (210).

6/08/05 Response, page 4

EXHIBIT 17
U.S. PATENT NO. 6,976,781
TERMS IN DISPUTE

ASSERTED CLAIM 6

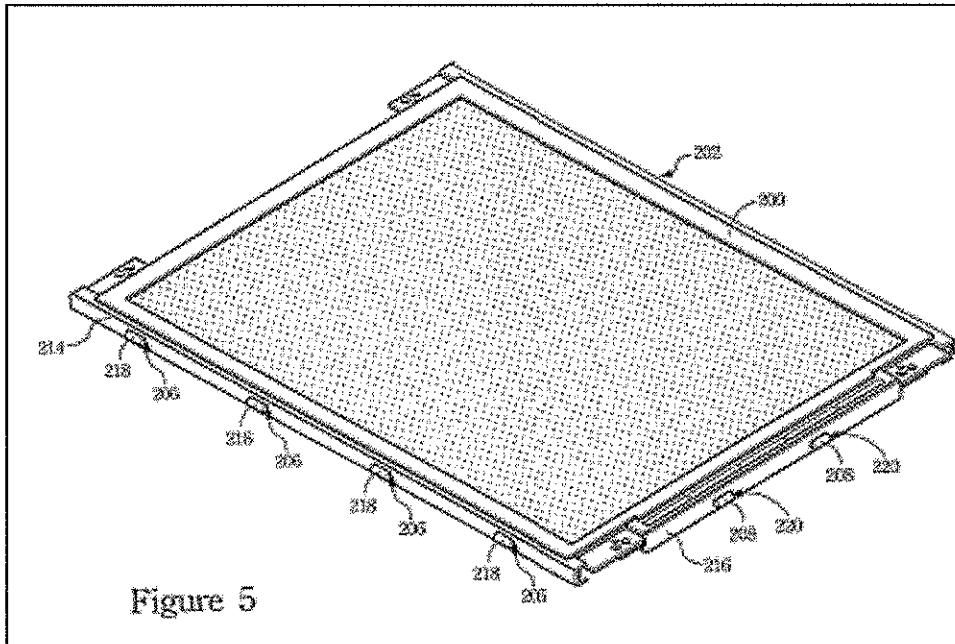
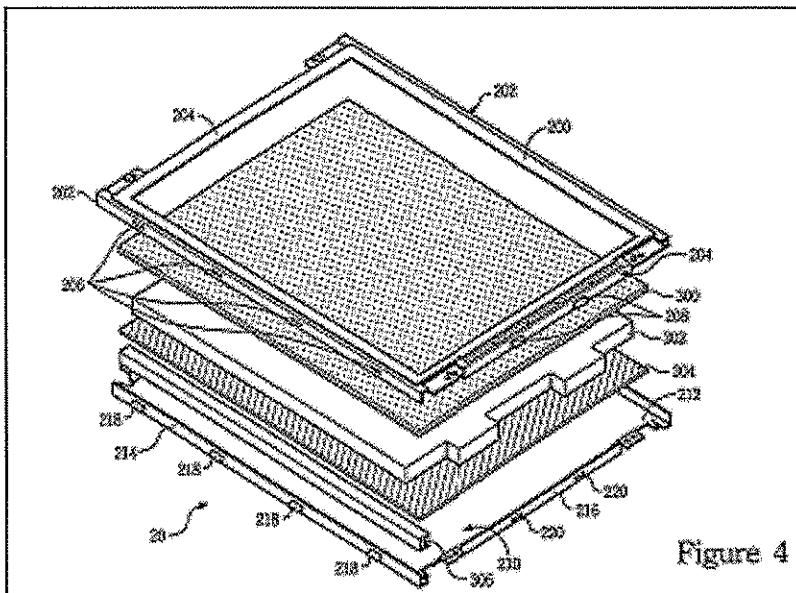
6. An assembling structure of a backlight module for containing and assembling components of said backlight module, said assembling structure comprising:
an upper frame, made of resin material, having a first edge and a second edge, wherein on outside surfaces of said first edge first hooks are formed to protrude outwardly, and on said second edge first holes are formed; and a lower frame, made of metal material, having a third edge and a fourth edge, wherein on said third edge second holes are formed, and on outside surfaces of said forth edge second hooks are formed to protrude outwardly, wherein said first edge is disposed inside said third edge and said first hooks are inserted and engaged in said second holes, said second edge is attached to the outside surfaces of said fourth edge, and said second hooks are inserted and engaged in said first holes as the upper frame is mounted onto the lower frame.

LGD's Claim Construction

on outside surfaces of said first edge first hooks are formed to protrude outwardly - two or more protrusions that are part of the frame and that extend outwardly from the first edge for fastening the frame to the bezel

on outside surfaces of said fourth edge second hooks are formed to protrude outwardly - two or more protrusions that are part of the frame and that extend outwardly from the fourth edge for fastening the frame to the bezel

INTRINSIC EVIDENCE FOR DISPUTED TERMS “ON OUTSIDE SURFACES OF SAID FIRST EDGE FIRST HOOKS ARE FORMED TO PROTRUDE OUTWARDLY” AND “ON OUTSIDE SURFACES OF SAID FOURTH EDGE SECOND HOOKS ARE FORMED TO PROTRUDE OUTWARDLY”:



INTRINSIC EVIDENCE FOR DISPUTED TERMS “ON OUTSIDE SURFACES OF SAID FIRST EDGE FIRST HOOKS ARE FORMED TO PROTRUDE OUTWARDLY” AND “ON OUTSIDE SURFACES OF SAID FOURTH EDGE SECOND HOOKS ARE FORMED TO PROTRUDE OUTWARDLY”: (con’t.)

elastic, the operator can disassemble the frame 108 from the bezel 110 easily just by pressing back slightly the hooks 110a of the bezel 110 and simultaneously pulling the edges of the frame 108. Even though such assembling manner has the advantage of easy disassembling, however, the structure strength of the backlight unit is worse due to the resin frame 108 is pliable.

2:1-5

bezel 111 made of metal material is too hard, it is difficult to disassemble the frame 109 from the bezel 111. The operators have to exert themselves to reject the hooks back and extract the frame 109 from the bezel 111. Apparently, such assembling design will increase the degree of difficulty in reassembling procedures. Under these conditions, the manufac-

2:15-20

gular board 212 respectively. On outer surfaces of each long sidewall 214 a plurality of hooks 218 are formed and protruding outwardly. And on each short sidewall 216 a plurality of holes 220 are formed.

3:18-21

sidewalls 214 of the bezel 210. Namely, the long sidewall 214 is covered by the edge 202. And the hooks 218 on the outer surfaces of the long sidewall 214 are inserted and engaged in the holes 206 of the long edge 202 to fasten the frame 200 onto the bezel 210. In the mean time, the short edge 204 is disposed and attached onto the inside surfaces of the short sidewall 216 of the bezel 210, and the hooks 208 on the outside surfaces of the short edge 204 are inserted and engaged in the holes 220 of the short sidewall 216 to fasten the frame 200 and the bezel 210, as shown in FIG. 5.

3:33-42

sidewall 216 can reinforce the structure strength of the backlight unit. At the same time, because the long edges 202 of the frame 200 are attached to the outside of the long sidewalls 214 of the bezel 210, the frame 200 can be disassembled from the bezel 210 very easily by pressing slightly the hooks 218 of the bezel 210 and pulling the long edges 202 of the frame 200.

It is noted that in the above embodiment, the long edges 202 of the frame 200 are formed with the holes 206, and the

3:48-56

INTRINSIC EVIDENCE FOR DISPUTED TERMS “ON OUTSIDE SURFACES OF SAID FIRST EDGE FIRST HOOKS ARE FORMED TO PROTRUDE OUTWARDLY” AND “ON OUTSIDE SURFACES OF SAID FOURTH EDGE SECOND HOOKS ARE FORMED TO PROTRUDE OUTWARDLY”: (con’t.)

Besides, in a further embodiment, only one edge of the rectangular frame is fabricated with holes and the others (the three edges) are fabricated with protruding hooks. Certainly, in this design, only one sidewall of the bezel is fabricated with hooks, and the others are fabricated with holes for fastening the frame and the bezel.

It is noted that in most backlight units the tubular lamp of the backlight unit is disposed on the inside of one long

4:1-8

Relatively, as shown in Fig. 4, in the present invention, the rectangular frame (200) has two opposite edges formed with holes and other two opposite edges formed with hooks, and the rectangular bezel (210) has two opposite sidewalls thereof formed with hooks and other two opposite sidewalls formed with holes.

1/28/05 Response, page 14

The present invention does not just combine a very flexible and elastic frame that is also structurally weak frame with a hard and difficult to disassemble bezel that is structurally strong. Referring to Figures 4-5 and the specification, the key point of the assembling structure of the present invention is to have two opposite long edges (202) of the rectangular frame (200) attach to an outside of the long sidewalls (214) of the bezel (210), and simultaneously to have two opposite short edges (204) of the rectangular frame (200) attach to an inside of the short sidewalls (216) of the bezel (210).

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EXHIBIT 17
U.S. PATENT NO. 6,976,781
TERMS IN DISPUTE

ASSERTED CLAIM 8

8. A backlight unit comprising:
a bezel made of metal material, having a first sidewall and a second sidewall, wherein on said first sidewall a plurality of first holes are formed, and on outer surfaces of said second sidewall a plurality of first hooks are formed to protrude outwardly;
a lightguide plate, disposed above said bezel;
a frame, disposed above said lightguide plate and mounted onto said bezel, having a first edge and a second edge, wherein on outer surfaces of said first edge a plurality of second hooks are formed to protrude outwardly, and on outer surfaces of said second edge a plurality of second holes are formed, wherein said first edge is disposed onto inside surfaces of said first sidewall, and said second hooks are inserted and engaged in said first holes for fastening said frame and said bezel, simultaneously said second edge is disposed onto outside surfaces of said second sidewall, and said first hooks are inserted and engaged in said second holes for fastening said frame and said bezel; and
a tubular lamp, disposed on said bezel, beside said lightguide plate, and adjacent to inside surfaces of said second sidewall of said bezel.

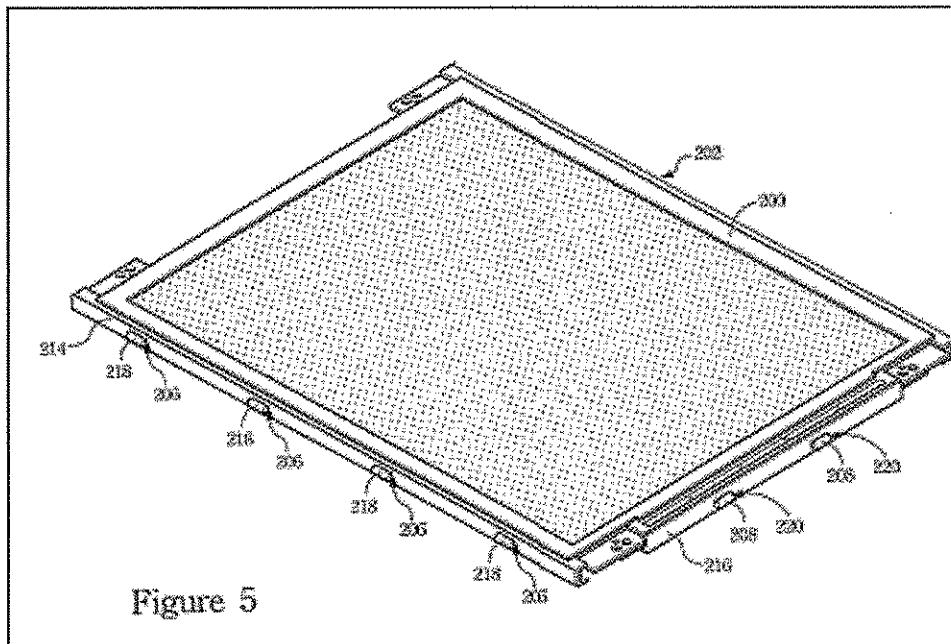
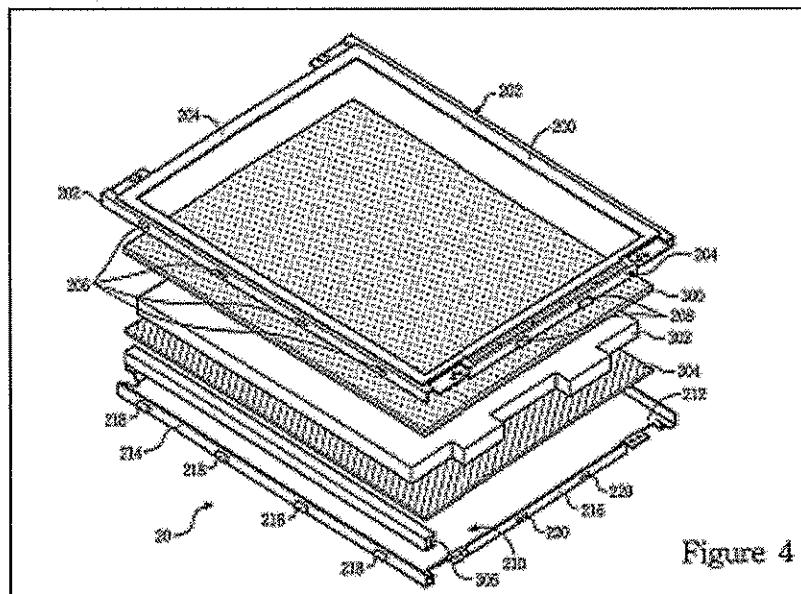
LGD's Claim Construction

on outer surfaces of said second sidewall a plurality of first hooks are formed to protrude outwardly - two or more protrusions that are part of the bezel and that extend outwardly from the second sidewall for fastening the bezel to the frame

on outer surfaces of said first edge a plurality of second hooks are formed to protrude outwardly - two or more protrusions that are part of the frame and that extend outwardly from the first edge for fastening the frame to the bezel

simultaneously said second edge is disposed onto outside surfaces of said second sidewall, and said first hooks are inserted and engaged in said second holes for fastening said frame and said bezel - the first hooks are inserted and engaged with the second holes at the same time the second hooks are inserted and engaged with the first holes to join the frame and bezel

INTRINSIC EVIDENCE FOR DISPUTED TERMS “ON OUTER SURFACES OF SAID SECOND SIDEWALL OF PLURALITY OF FIRST HOOKS ARE FORMED TO PROTRUDE OUTWARDLY” AND “ON OUTER SURFACES OF SAID FIRST EDGE A PLURALITY OF SECOND HOOKS ARE FORMED TO PROTRUDE OUTWARDLY”:



INTRINSIC EVIDENCE FOR DISPUTED TERMS “ON OUTER SURFACES OF SAID SECOND SIDEWALL OF PLURALITY OF FIRST HOOKS ARE FORMED TO PROTRUDE OUTWARDLY” AND “ON OUTER SURFACES OF SAID FIRST EDGE A PLURALITY OF SECOND HOOKS ARE FORMED TO PROTRUDE OUTWARDLY”

(con't.):

elastic, the operator can disassemble the frame 108 from the bezel 110 easily just by pressing back slightly the hooks 110a of the bezel 110 and simultaneously pulling the edges of the frame 108. Even though such assembling manner has the advantage of easy disassembling, however, the structure strength of the backlight unit is worse due to the resin frame 108 is pliable.

2:1-5

bezel 111 made of metal material is too hard, it is difficult to disassemble the frame 109 from the bezel 111. The operators have to exert themselves to reject the hooks back and extract the frame 109 from the bezel 111. Apparently, such assembling design will increase the degree of difficulty in reassembling procedures. Under these conditions, the manufac-

2:15-20

gular board 212 respectively. On outer surfaces of each long sidewall 214 a plurality of hooks 218 are formed and protruding outwardly. And on each short sidewall 216 a plurality of holes 220 are formed.

3:18-21

sidewalls 214 of the bezel 210. Namely, the long sidewall 214 is covered by the edge 202. And the hooks 218 on the outer surfaces of the long sidewall 214 are inserted and engaged in the holes 206 of the long edge 202 to fasten the frame 200 onto the bezel 210. In the mean time, the short edge 204 is disposed and attached onto the inside surfaces of the short sidewall 216 of the bezel 210, and the hooks 208 on the outside surfaces of the short edge 204 are inserted and engaged in the holes 220 of the short sidewall 216 to fasten the frame 200 and the bezel 210, as shown in FIG. 5.

3:33-42

sidewall 216 can reinforce the structure strength of the backlight unit. At the same time, because the long edges 202 of the frame 200 are attached to the outside of the long sidewalls 214 of the bezel 210, the frame 200 can be disassembled from the bezel 210 very easily by pressing slightly the hooks 218 of the bezel 210 and pulling the long edges 202 of the frame 200.

It is noted that in the above embodiment, the long edges 202 of the frame 200 are formed with the holes 206, and the

3:48-56

INTRINSIC EVIDENCE FOR DISPUTED TERMS “ON OUTER SURFACES OF SAID SECOND SIDEWALL OF PLURALITY OF FIRST HOOKS ARE FORMED TO PROTRUDE OUTWARDLY” AND “ON OUTER SURFACES OF SAID FIRST EDGE A PLURALITY OF SECOND HOOKS ARE FORMED TO PROTRUDE OUTWARDLY”
(con’t.):

Besides, in a further embodiment, only one edge of the rectangular frame is fabricated with holes and the others (the three edges) are fabricated with protruding hooks. Certainly, in this design, only one sidewall of the bezel is fabricated with hooks, and the others are fabricated with holes for fastening the frame and the bezel.

It is noted that in most backlight units the tubular lamp of the backlight unit is disposed on the inside of one long

4:1-8

Relatively, as shown in Fig. 4, in the present invention, the rectangular frame (200) has two opposite edges formed with holes and other two opposite edges formed with hooks, and the rectangular bezel (210) has two opposite sidewalls thereof formed with hooks and other two opposite sidewalls formed with holes.

1/28/05 Response, page 14

The present invention does not just combine a very flexible and elastic frame that is also structurally weak frame with a hard and difficult to disassemble bezel that is structurally strong. Referring to Figures 4-5 and the specification, the key point of the assembling structure of the present invention is to have two opposite long edges (202) of the rectangular frame (200) attach to an outside of the long sidewalls (214) of the bezel (210), and simultaneously to have two opposite short edges (204) of the rectangular frame (200) attach to an inside of the short sidewalls (216) of the bezel (210).

6/08/05 Response, page 4

INTRINSIC EVIDENCE FOR DISPUTED TERM
“SIMULTANEOUSLY SAID SECOND EDGE IS DISPOSED ONTO
OUTSIDE SURFACES OF SAID SECOND SIDEWALL, AND SAID
FIRST HOOKS ARE INSERTED AND ENGAGED IN SAID SECOND
HOLES FOR FASTENING SAID FRAME AND SAID BEZEL”

elastic, the operator can disassemble the frame 108 from the bezel 110 easily just by pressing back slightly the hooks 110a of the bezel 110 and simultaneously pulling the edges of the frame 108. Even though such assembling manner has the advantage of easy disassembling, however, the structure strength of the backlight unit is worse due to the resin frame 108 is pliable.

2:1-5

sidewall 216 can reinforce the structure strength of the backlight unit. At the same time, because the long edges 202 of the frame 200 are attached to the outside of the long sidewalls 214 of the bezel 210, the frame 200 can be disassembled from the bezel 210 very easily by pressing slightly the hooks 218 of the bezel 210 and pulling the long edges 202 of the frame 200.

it is noted that in the above embodiment, the long edges 202 of the frame 200 are formed with the holes 206, and the

3:48-56

Relatively, as shown in Fig. 4, in the present invention, the rectangular frame (200) has two opposite edges formed with holes and other two opposite edges formed with hooks, and the rectangular bezel (210) has two opposite sidewalls thereof formed with hooks and other two opposite sidewalls formed with holes. When the frame (200) is assembled with the bezel (210), two opposite edges of the frame (200) will cover and attach to outer surfaces of the corresponding sidewalls of the bezel (210), which has the advantage of a disassembling convenience because the edges of the frame (200) made of resin material is pliable. The other two opposite edges of the frame (200) will attach to inside surfaces of the bezel (210), which has the advantage of increasing the whole structure strength of the backlight unit because the sidewalls of the bezel (210) made of metal shield the edges of the frame (200).

1/28/05 Response, page 14

INTRINSIC EVIDENCE FOR DISPUTED TERM

"SIMULTANEOUSLY SAID SECOND EDGE IS DISPOSED ONTO OUTSIDE SURFACES OF SAID SECOND SIDEWALL, AND SAID FIRST HOOKS ARE INSERTED AND ENGAGED IN SAID SECOND HOLES FOR FASTENING SAID FRAME AND SAID BEZEL" (con't.)

The present invention does not just combine a very flexible and elastic frame that is also structurally weak frame with a hard and difficult to disassemble bezel that is structurally strong. Referring to Figures 4-5 and the specification, the key point of the assembling structure of the present invention is to have two opposite long edges (202) of the rectangular frame (200) attach to an outside of the long sidewalls (214) of the bezel (210), and simultaneously to have two opposite short edges (204) of the rectangular frame (200) attach to an inside of the short sidewalls (216) of the bezel (210).

6/08/05 Response, page 4

EXHIBIT 17
U.S. PATENT NO. 6,76,781
TERMS IN DISPUTE

ASSERTED CLAIM 1**LGD's Claim Construction**

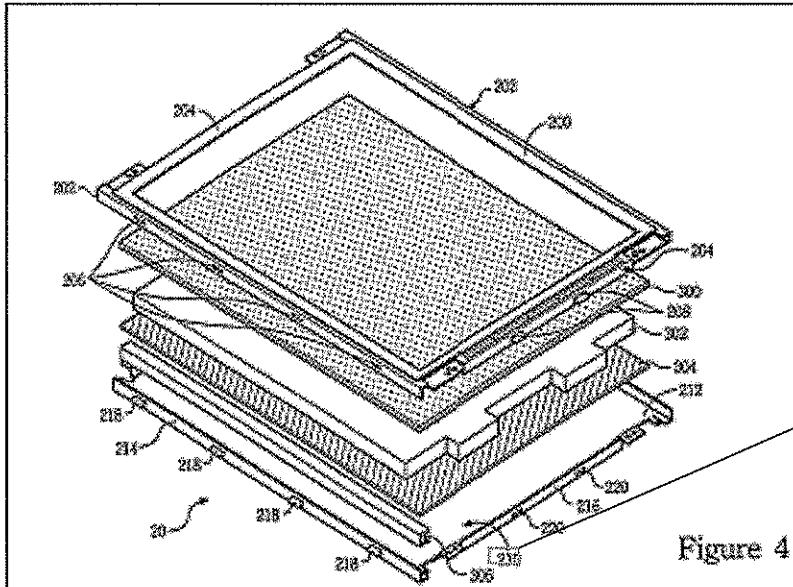
1. An assembling structure of a backlight module for containing and fabricating components of said backlight module, said assembling structure comprising:
 a frame, having a first edge and a second edge, wherein on outer surfaces of said first edge a plurality of first hooks are formed to protrude outwardly, and on outer surfaces of said second edge a plurality of first holes are formed;
 a bezel, made of metal material, having a first sidewall and a second sidewall, wherein on said first sidewall a plurality of second holes are formed, and on outer surfaces of said second sidewall a plurality of second hooks are formed to protrude outwardly;
 wherein said first edge is disposed onto inside surfaces of said first sidewall, said first hooks are inserted and engaged in said second holes, said second edge is disposed onto outside surfaces of said second sidewall, and said second hooks are inserted and engaged in said first holes as said frame is mounted onto said bezel.

bezel¹ – the outermost back cover for the backlight module

on outer surfaces of said second sidewall a plurality of second hooks are formed to protrude outwardly – two or more protrusions that are part of the bezel and that extend outwardly from the second sidewall for fastening the bezel to the frame

as said frame is mounted onto said bezel – at the same time when the frame and bezel are joined

¹ Disputed Term "bezel" also appears in asserted claims 3, 5, 8, 10, and 13 in the same context.

INTRINSIC EVIDENCE FOR DISPUTED TERM "BEZEL"

Item 210

Figure 4

Refer to FIG. 1, the typical backlight unit 10 applied to the LCDs comprises a lightguide plate 100, optical films 102, a reflector sheet 104, a tubular lamp 106, a frame 108 and a backbezel 110. The frame 108 and the bezel 110 are assembled together to contain and fabricate above components. When the backlight unit 10 is assembled, the reflector sheet 104 is disposed on the bezel 110, and then the lightguide plate 100 and the optical films 102 are disposed in sequence on the reflector sheet 104. Next, the frame 108 is mounted and fastened onto the bezel 110. And the tubular lamp 106 is inserted into the backlight unit 10 through an opening at the corner of the frame 108. The tubular lamp 106 is inserted into the slot between the lightguide plate 100 and one edge of bezel 110.

1:30-43

Correspondingly, the bezel 210 also has a rectangular shape. As shown in the FIGURE, the bezel 210 has a rectangular board 212, two long sidewalls 214 and two short sidewalls 216 which are erect from the edges of the rectangular board 212 respectively. On outer surfaces of each long sidewall 214 a plurality of hooks 218 are formed and protruding outwardly. And on each short sidewall 216 a plurality of holes 220 are formed.

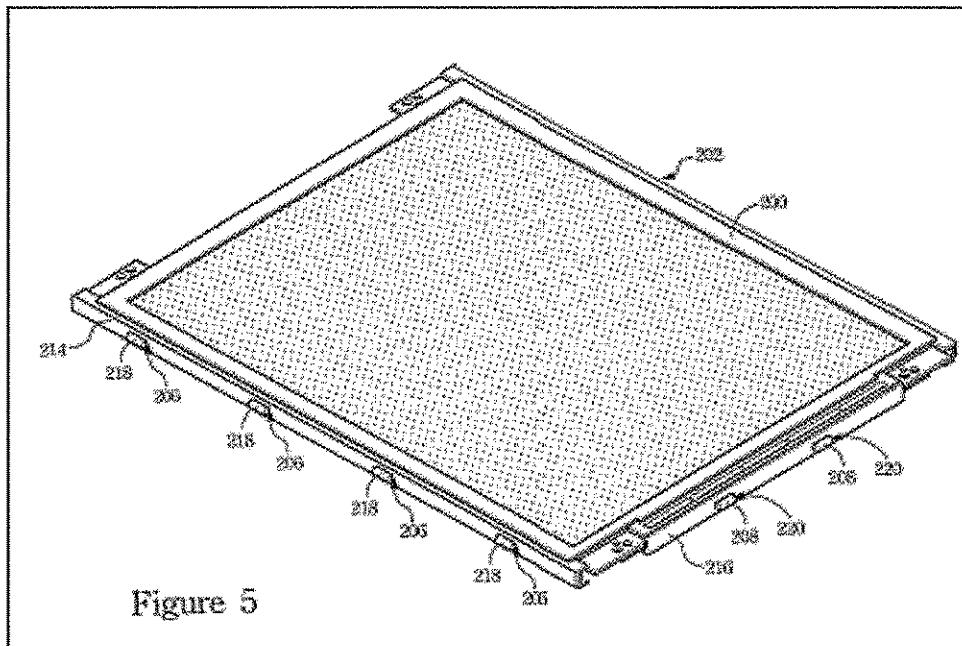
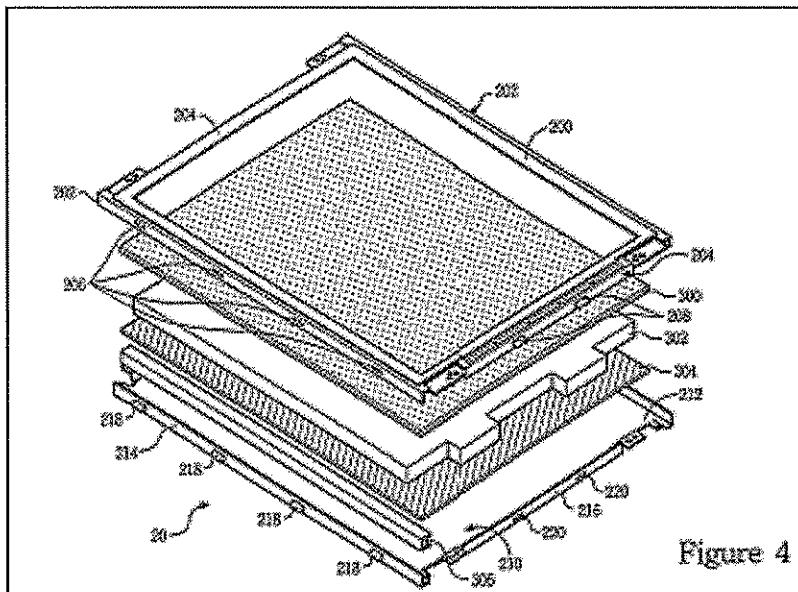
3:14-21

INTRINSIC EVIDENCE FOR DISPUTED TERM "BEZEL" (con't.)

As aforementioned, when the components of the back-light unit are assembled, the reflector sheet 304, the light-guide plate 302 and optical films 300 are disposed in sequence onto the rectangular board 212 of the bezel 210. As shown in FIG. 4, the reflector sheet 304 is disposed on the rectangular board 212 of the bezel 210, the lightguide plate 302 is disposed on the reflector sheet 304, and the optical films 300 are disposed on the lightguide plate 302. Then, the frame 200 is mounted onto the bezel 210 to contain those components. The long edges 202 of the frame 200 are disposed and attached onto the outside surfaces of the long sidewalls 214 of the bezel 210. Namely, the long sidewall

3:22-33

INTRINSIC EVIDENCE FOR DISPUTED TERM “ON OUTER SURFACES OF SAID SECOND SIDEWALL A PLURALITY OF SECOND HOOKS ARE FORMED TO PROTRUDE OUTWARDLY”:



INTRINSIC EVIDENCE FOR DISPUTED TERM “ON OUTER SURFACES OF SAID SECOND SIDEWALL A PLURALITY OF SECOND HOOKS ARE FORMED TO PROTRUDE OUTWARDLY”

(cont'd):

elastic, the operator can disassemble the frame 108 from the bezel 110 easily just by pressing back slightly the hooks 110a of the bezel 110 and simultaneously pulling the edges of the frame 108. Even though such assembling manner has the advantage of easy disassembling, however, the structure strength of the backlight unit is worse due to the resin frame 108 is pliable.

2:1-5

bezel 111 made of metal material is too hard, it is difficult to disassemble the frame 109 from the bezel 111. The operators have to exert themselves to reject the hooks back and extract the frame 109 from the bezel 111. Apparently, such assembling design will increase the degree of difficulty in reassembling procedures. Under these conditions, the manufac-

2:15-20

gular board 212 respectively. On outer surfaces of each long sidewall 214 a plurality of hooks 218 are formed and protruding outwardly. And on each short sidewall 216 a plurality of holes 220 are formed.

3:18-21

sidewalls 214 of the bezel 210. Namely, the long sidewall 214 is covered by the edge 202. And the hooks 218 on the outer surfaces of the long sidewall 214 are inserted and engaged in the holes 206 of the long edge 202 to fasten the frame 200 onto the bezel 210. In the mean time, the short edge 204 is disposed and attached onto the inside surfaces of the short sidewall 216 of the bezel 210, and the hooks 208 on the outside surfaces of the short edge 204 are inserted and engaged in the holes 220 of the short sidewall 216 to fasten the frame 200 and the bezel 210, as shown in FIG. 5.

3:33-42

sidewall 216 can reinforce the structure strength of the backlight unit. At the same time, because the long edges 202 of the frame 200 are attached to the outside of the long sidewalls 214 of the bezel 210, the frame 200 can be disassembled from the bezel 210 very easily by pressing slightly the hooks 218 of the bezel 210 and pulling the long edges 202 of the frame 200.

It is noted that in the above embodiment, the long edges 202 of the frame 200 are formed with the holes 206, and the

3:48-56

INTRINSIC EVIDENCE FOR DISPUTED TERM "ON OUTER SURFACES OF SAID SECOND SIDEWALL A PLURALITY OF SECOND HOOKS ARE FORMED TO PROTRUDE OUTWARDLY"

(cont'd):

Besides, in a further embodiment, only one edge of the rectangular frame is fabricated with holes and the others (the three edges) are fabricated with protruding hooks. Certainly, in this design, only one sidewall of the bezel is fabricated with hooks, and the others are fabricated with holes for fastening the frame and the bezel.

It is noted that in most backlight units the tubular lamp of the backlight unit is disposed on the inside of one long

4:1-8

Relatively, as shown in Fig. 4, in the present invention, the rectangular frame (200) has two opposite edges formed with holes and other two opposite edges formed with hooks, and the rectangular bezel (210) has two opposite sidewalls thereof formed with hooks and other two opposite sidewalls formed with holes.

1/28/05 Response, page 14

The present invention does not just combine a very flexible and elastic frame that is also structurally weak frame with a hard and difficult to disassemble bezel that is structurally strong. Referring to Figures 4-5 and the specification, the key point of the assembling structure of the present invention is to have two opposite long edges (202) of the rectangular frame (200) attach to an outside of the long sidewalls (214) of the bezel (210), and simultaneously to have two opposite short edges (204) of the rectangular frame (200) attach to an inside of the short sidewalls (216) of the bezel (210).

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INTRINSIC EVIDENCE FOR DISPUTED TERM "AS SAID FRAME IS MOUNTED ONTO SAID BEZEL"

elastic, the operator can disassemble the frame 108 from the bezel 110 easily just by pressing back slightly the hooks 110a of the bezel 110 and simultaneously pulling the edges of the frame 108. Even though such assembling manner has the advantage of easy disassembling, however, the structure strength of the backlight unit is worse due to the resin frame 108 is pliable.

2:1-5

sidewall 216 can reinforce the structure strength of the backlight unit. At the same time, because the long edges 202 of the frame 200 are attached to the outside of the long sidewalls 214 of the bezel 210, the frame 200 can be disassembled from the bezel 210 very easily by pressing slightly the hooks 218 of the bezel 210 and pulling the long edges 202 of the frame 200.

It is noted that in the above embodiment, the long edges 202 of the frame 200 are formed with the holes 206, and the

3:48-56

Relatively, as shown in Fig. 4, in the present invention, the rectangular frame (200) has two opposite edges formed with holes and other two opposite edges formed with hooks, and the rectangular bezel (210) has two opposite sidewalls thereof formed with hooks and other two opposite sidewalls formed with holes. When the frame (200) is assembled with the bezel (210), two opposite edges of the frame (200) will cover and attach to outer surfaces of the corresponding sidewalls of the bezel (210), which has the advantage of a disassembling convenience because the edges of the frame (200) made of resin material is pliable. The other two opposite edges of the frame (200) will attach to inside surfaces of the bezel (210), which has the advantage of increasing the whole structure strength of the backlight unit because the sidewalls of the bezel (210) made of metal shield the edges of the frame (200).

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INTRINSIC EVIDENCE FOR DISPUTED TERM "AS SAID FRAME IS MOUNTED ONTO SAID BEZEL" (con't.)

The present invention does not just combine a very flexible and elastic frame that is also structurally weak frame with a hard and difficult to dissemble bezel that is structurally strong. Referring to Figures 4-5 and the specification, the key point of the assembling structure of the present invention is to have two opposite long edges (202) of the rectangular frame (200) attach to an outside of the long sidewalls (214) of the bezel (210), and simultaneously to have two opposite short edges (204) of the rectangular frame (200) attach to an inside of the short sidewalls (216) of the bezel (210).

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EXHIBIT L-18

Ex. L-18
CMO US PATENT NO. 7,125,157

INDEX OF DISPUTED TERMS

<u>CLAIM TERMS</u>	<u>PAGE</u>
a first supporting portion, disposed on the frame	1
supporting portion.....	1
a second supporting portion, further disposed on the frame	1
a first constraining portion.....	21
constraining portion	21
a second constraining portion	21
disposed in a first position	28
first position	28
the first supporting portion partially contacts an inner wall of the first constraining portion for positioning the film.....	1
does not contact.....	28
disposed in a second position.....	28
second position.....	28
the second supporting portion partially contacts an inner wall of the second constraining portion for positioning the film.....	1
on opposite corners of the film	46
on adjacent corners of the film.....	46
frame comprising a first supporting portion and a second supporting portion	1

EXHIBIT L-18
U.S. PATENT NO. 7,125,157
TERMS IN DISPUTE

ASSERTED CLAIM 1

1. A backlight unit for a liquid crystal display, comprising:
a frame;
a first supporting portion, disposed on the frame;
a second supporting portion, further disposed on the frame; and
a film comprising a first constraining portion and a second constraining portion, positioned on the frame by the first supporting portion and the second supporting portion passing through the first constraining portion and the second constraining portion, respectively;
when the frame is disposed in a first position, the first supporting portion partially contacts an inner wall of the first constraining portion for positioning the film, and the second supporting portion does not contact the second constraining portion; and
when the frame is disposed in a second position, the second supporting portion partially contacts an inner wall of the second constraining portion for positioning the film and the first supporting portion does not contact the first constraining portion.

LGD's Claim Construction

a first supporting portion, disposed on the frame¹ -
a first projection from the frame that supports the film when the backlight is in a first position

supporting portion - see above

a second supporting portion, further disposed on the frame² -
a second projection from the frame that supports the film when the backlight is rotated from the first position

the second supporting portion partially contacts an inner wall of the second constraining portion for positioning the film - the second projection touches a top portion of the second passage to support the film and has a gap below the second projection

frame comprising a first supporting portion and a second supporting portion -
see constructions above

ASSERTED CLAIM 16

16. A liquid crystal display, comprising:
a housing, movable between a first position and a second position; and
a backlight unit, disposed in the housing, comprising:
a frame comprising a first supporting portion and a second supporting portion; and
a film comprising a first constraining portion and a second constraining portion;
when the frame is disposed in a first position, the first supporting portion supports the first constraining portion for positioning the film, and the second supporting portion does not contact the second constraining portion; and
when the frame is disposed in a second position, the second supporting portion supports the second constraining portion for positioning the film, and the first supporting portion does not contact the first constraining portion.

¹ Disputed Term “a first supporting portion” also appears in asserted claim 16 in the same context.

² Disputed Term “a second supporting portion” also appears in asserted claim 16 in the same context.

INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST SUPPORTING PORTION, DISPOSED ON THE FRAME,” “SUPPORTING PORTION” AND “FRAME COMPRISING A FIRST SUPPORTING PORTION AND A SECOND SUPPORTING PORTION”:

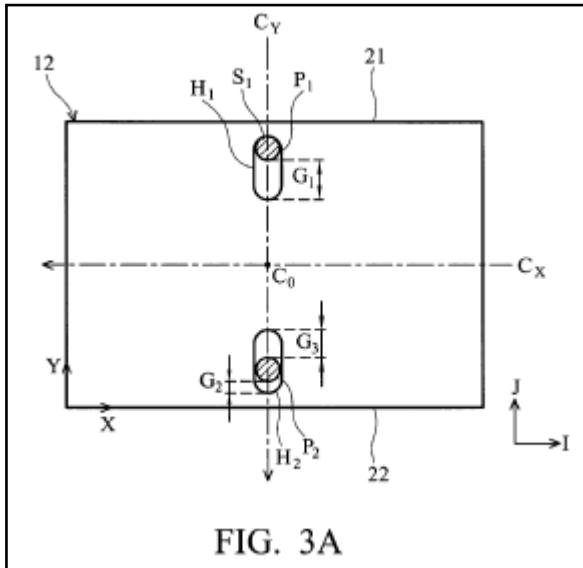


FIG. 3A

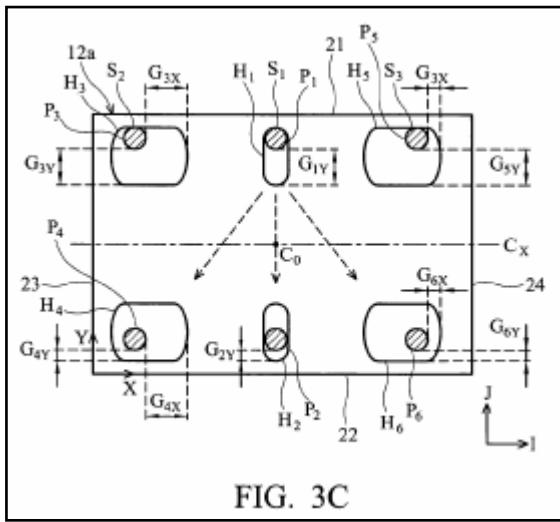


FIG. 3C

INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST SUPPORTING PORTION, DISPOSED ON THE FRAME,” “SUPPORTING PORTION” AND “FRAME COMPRISING A FIRST SUPPORTING PORTION AND A SECOND SUPPORTING PORTION” (cont’d):

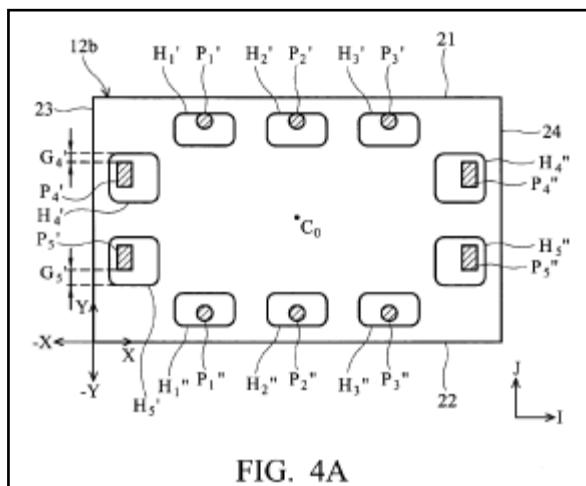


FIG. 4A

an allowance for film expansion or contraction due to temperature variation.

The first supporting portion and the second supporting portion each comprises a protrusion, a cylinder, or a cuboid.

The first and the second constraining portions are circular, elliptical, rectangular, rectangular with rounded corners, or polygonal.

2:59-65

elliptical, rectangular, rectangular with rounded corners, or polygonal.

When the frame is disposed at the first position, the first constraining portion and the first supporting portion con-

~

strain a movement range of the film in a direction perpendicular to a gravity-acting direction, and the frame and the first supporting portion constrain the movement range of the film in an extending direction of the first supporting portion.

Furthermore, when the frame is disposed at the second position, the second constraining portion and the second

2:66-3:4

INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST SUPPORTING PORTION, DISPOSED ON THE FRAME,” “SUPPORTING PORTION” AND “FRAME COMPRISING A FIRST SUPPORTING PORTION AND A SECOND SUPPORTING PORTION” (cont’d):

of the supporting portions. The holes are formed along the gravity-acting directions of the frame 15 and the housing 30.

The supporting portion P_1 comprises plastics, metal or other materials. The supporting portion P_1 protrudes from the frame 15, correspondingly passing through the hole H_1 on the optical films 12 to position optical films 12 on the frame 15. Since the embodiments of the invention focus on

4:15-21

10. FIG. 3B is a schematic view of a variation of FIG. 3A.

In FIG. 3A, the optical films 12 are connected to the frame (not shown) via the supporting portions P_1 at a first position. FIG. 3B shows the optical films 12 at a second position. The first position is referred to as an initial position of the housing 30, suspended on a plane IJ such that the axis Y of the optical films 12 corresponds to the axis J. The second position is in a suspended position when the housing 30 rotates with respect to the axis K from the first position to 180°.

The first and second supporting portions P_1 and P_2 penetrating the first and second holes H_1 and H_2 , respectively,

4:47-58

is constrained by a short axis of the elliptical first hole. Note that the axis C_Y is parallel to the gravity-acting direction of the optical films 12.

When the frame 15 is disposed at the first position (FIG. 3A), the first edge 21 is an upper edge of the optical film 12. The second edge 22 is a lower edge. Due to the weight of the optical film 12, the first supporting portion P_1 partially contacts an inner wall S1 of the first hole H_1 to position the optical film 12.

The symbol “ G_1 ” represents the dimension of a first gap, which is the remaining portion of the first hole H_1 subtracted from the first supporting portion P_1 . The size of the first gap

5:14-25

INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST SUPPORTING PORTION, DISPOSED ON THE FRAME,” “SUPPORTING PORTION” AND “FRAME COMPRISING A FIRST SUPPORTING PORTION AND A SECOND SUPPORTING PORTION” (cont’d):

Additionally, the supporting portions P_3 , P_4 , P_5 , and P_6 pass through the rectangular holes H_3 , H_4 , H_5 , and H_6 with rounded corners, movable in direction I or J. Thus, at the first position, only the supporting portions P_3 , P_1 , and P_5 located at the upper edge partially contact the inner walls S_3 , S_1 , and S_5 of the holes H_3 , H_1 , and H_5 to position the optical film 12a.

6:55-61

becomes the upper edge. The first edge 21 becomes the lower edge. The holes H_4 , H_2 , and H_6 are the constraining portions for supporting the film. Only the supporting portions P_4 , P_2 , and P_6 partially contact the inner walls of the holes H_4 , H_2 , and H_6 . Thus, other supporting portions do not support the optical films, allowing thermal expansion and contraction.

In conclusion, the pairs of holes are symmetrically defined on the optical films 12 at opposite corners, adjacent corners, or adjacent edges. The liquid crystal display of the

7:27-36

As shown in FIG. 4A, three pairs of symmetrically arranged holes, H_1' and H_1'' , H_2' and H_2'' , H_3' and H_3'' are disposed at opposite edges 21 and 22 of the optical film 12b. When the liquid crystal display is disposed at the first position (angle 0°), only the supporting portions P_1' , P_2' , and P_3' on the frame (not shown) partially contact the inner walls of the holes H_1' , H_2' and H_3' to support the optical film 12b.

As shown in FIG. 4B, two pairs of symmetrically arranged holes, H_4' and H_4'' and H_5' and H_5'' , are disposed

7:46-54

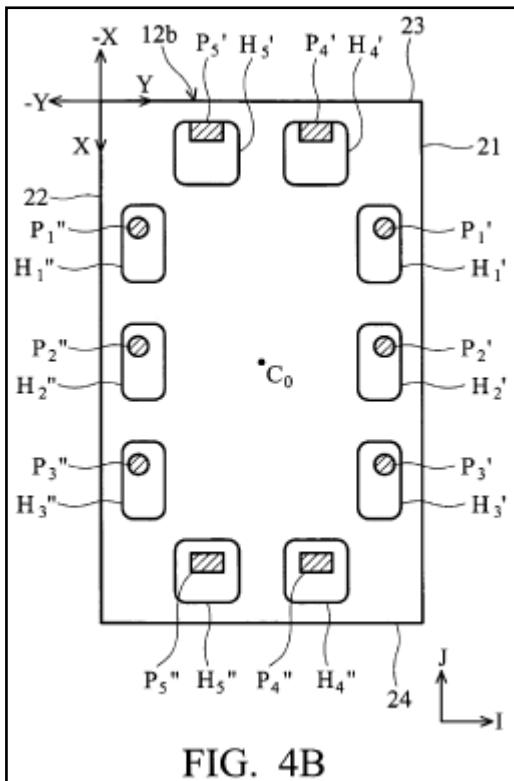
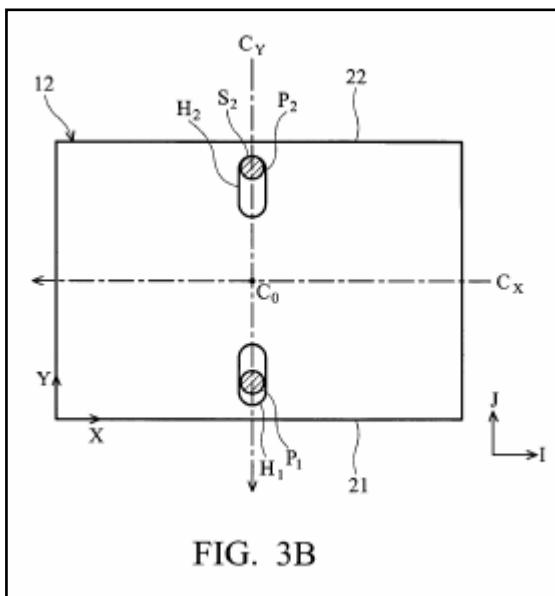
INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST SUPPORTING PORTION, DISPOSED ON THE FRAME,” “SUPPORTING PORTION” AND “FRAME COMPRISING A FIRST SUPPORTING PORTION AND A SECOND SUPPORTING PORTION” (cont’d):

The elliptical shapes of the holes H_1 and H_2 constrain the movement range of the supporting portions P_1 and P_2 in directions I and J. When the frame 15 is disposed at the first position, the first supporting portion P_1 contacts the first hole H_1 to support the optical film 12, and the first hole H_1 constrains the first supporting portion P_1 in direction I, thereby restricting the movement of the optical film 12 in direction I. The second supporting portion P_2 does not support the optical film 12 at the first position with the gap G_2 formed along the Y-axis. Thus, when the optical film 12 expands or contracts due to temperature variation, or when the optical film 12 is pulled by self-weight, the second supporting portion P_2 does not contact the second hole H_2 of the optical film 12. Since there is no contact between the second supporting portion P_2 and the second hole H_2 , stress does not build therebetween. Moreover, the gaps G_1 and G_2 allow the optical films 12 to freely expand or contract, thereby preventing Mura defects.

When the frame 15 is rotated to the second position (FIG. 3B) by rotating 180°, the second edge 22 becomes the upper edge, and the first edge 21 becomes the lower edge. The second supporting portion P_2 partially contacts the inner wall S_2 of the second hole H_2 to support the optical films 12. The gap G_2 is determined by thermal expansion coefficient of the optical film 12, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Thus, at the second position, only the second supporting portion P_2 supports the optical film 12. The second hole H_2 constrains the movement range of the second supporting portion P_2 in direction I. The first supporting portion P_1 does not support the optical film 12, leaving a gap G_1 therebetween. During

5:36-67

INTRINSIC EVIDENCE FOR DISPUTED TERM “A SECOND SUPPORTING PORTION, FURTHER DISPOSED ON THE FRAME” AND “FRAME COMPRISING A FIRST SUPPORTING PORTION AND A SECOND SUPPORTING PORTION”:



INTRINSIC EVIDENCE FOR DISPUTED TERM “A SECOND SUPPORTING PORTION, FURTHER DISPOSED ON THE FRAME” AND “FRAME COMPRISING A FIRST SUPPORTING PORTION AND A SECOND SUPPORTING PORTION” (cont’d):

and the second constraining portion, and the second gap is an allowance for film expansion or contraction due to temperature variation.

The first supporting portion and the second supporting portion each comprises a protrusion, a cylinder, or a cuboid.

The first and the second constraining portions are circular, elliptical, rectangular, rectangular with rounded corners, or polygonal.

2:58-65

first supporting portion constrain the movement range of the film in an extending direction of the first supporting portion.

Furthermore, when the frame is disposed at the second position, the second constraining portion and the second supporting portion constrain a movement range of the film in a direction perpendicular to a gravity-acting direction, and the frame and the second supporting portion constrain the movement range of the film in an extending direction of the second supporting portion.

In an embodiment, when the first constraining portion is elliptical, and when the frame moves to the first position or

3:3-14

As shown in FIG. 4B, two pairs of symmetrically arranged holes, H_4' and H_4'' and H_5' and H_5'' , are disposed at the opposite edges 23 and 24 of the optical film 12b. When the liquid crystal display is disposed at the second position, rotated from 0° to 90°, only the supporting portions P_4' and P_5' on the frame (not shown) partially contact the inner walls of the holes H_4' and H_5' to support the optical film 12b.

As shown in FIG. 4C, when the liquid crystal display is disposed at the third position, rotated from 0° to 180°, only

7:53-61

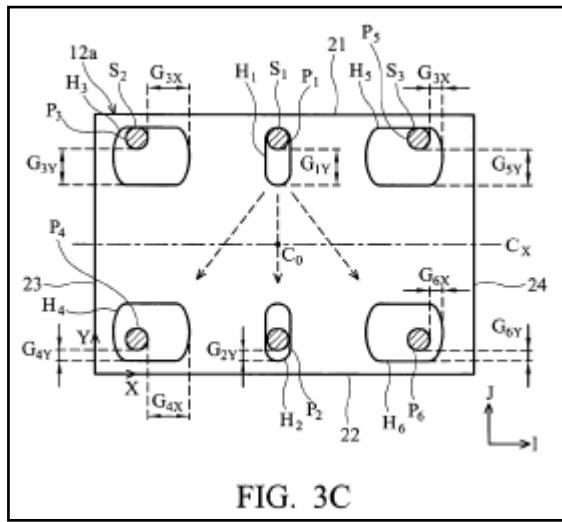
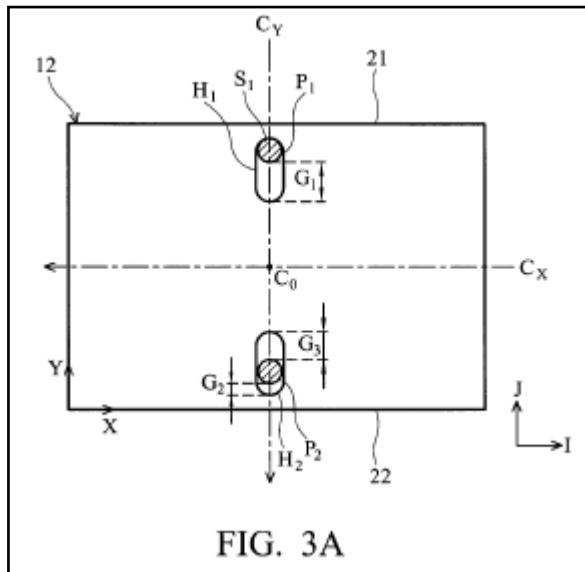
INTRINSIC EVIDENCE FOR DISPUTED TERM “A SECOND SUPPORTING PORTION, FURTHER DISPOSED ON THE FRAME” AND “FRAME COMPRISING A FIRST SUPPORTING PORTION AND A SECOND SUPPORTING PORTION” (cont’d):

The elliptical shapes of the holes H_1 and H_2 constrain the movement range of the supporting portions P_1 and P_2 in directions I and J. When the frame 15 is disposed at the first position, the first supporting portion P_1 contacts the first hole H_1 to support the optical film 12, and the first hole H_1 constrains the first supporting portion P_1 in direction I, thereby restricting the movement of the optical film 12 in direction I. The second supporting portion P_2 does not support the optical film 12 at the first position with the gap G_2 formed along the Y-axis. Thus, when the optical film 12 expands or contracts due to temperature variation, or when the optical film 12 is pulled by self-weight, the second supporting portion P_2 does not contact the second hole H_2 of the optical film 12. Since there is no contact between the second supporting portion P_2 and the second hole H_2 , stress does not build therebetween. Moreover, the gaps G_1 and G_2 allow the optical films 12 to freely expand or contract, thereby preventing Mura defects.

When the frame 15 is rotated to the second position (FIG. 3B) by rotating 180°, the second edge 22 becomes the upper edge, and the first edge 21 becomes the lower edge. The second supporting portion P_2 partially contacts the inner wall S_2 of the second hole H_2 to support the optical films 12. The gap G_2 is determined by thermal expansion coefficient of the optical film 12, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Thus, at the second position, only the second supporting portion P_2 supports the optical film 12. The second hole H_2 constrains the movement range of the second supporting portion P_2 in direction I. The first supporting portion P_1 does not support the optical film 12, leaving a gap G_1 therebetween. During

5:36-67

INTRINSIC EVIDENCE FOR DISPUTED TERM “THE SECOND SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE SECOND CONSTRAINING PORTION FOR POSITIONING THE FILM”:



INTRINSIC EVIDENCE FOR DISPUTED TERM “THE SECOND SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE SECOND CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):

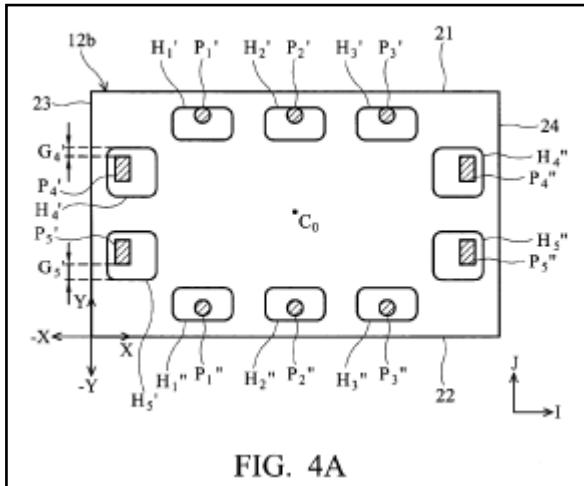


FIG. 4A

an allowance for film expansion or contraction due to temperature variation.

The first supporting portion and the second supporting portion each comprises a protrusion, a cylinder, or a cuboid.

The first and the second constraining portions are circular, elliptical, rectangular, rectangular with rounded corners, or polygonal.

2:59-65

elliptical, rectangular, rectangular with rounded corners, or polygonal.

When the frame is disposed at the first position, the first constraining portion and the first supporting portion con-

~

strain a movement range of the film in a direction perpendicular to a gravity-acting direction, and the frame and the first supporting portion constrain the movement range of the film in an extending direction of the first supporting portion.

Furthermore, when the frame is disposed at the second position, the second constraining portion and the second

2:66-3:4

INTRINSIC EVIDENCE FOR DISPUTED TERM “THE SECOND SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE SECOND CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):

of the supporting portions. The holes are formed along the gravity-acting directions of the frame 15 and the housing 30.

The supporting portion P_1 comprises plastics, metal or other materials. The supporting portion P_1 protrudes from the frame 15, correspondingly passing through the hole H_1 on the optical films 12 to position optical films 12 on the frame 15. Since the embodiments of the invention focus on

4:15-21

10. FIG. 3B is a schematic view of a variation of FIG. 3A.

In FIG. 3A, the optical films 12 are connected to the frame (not shown) via the supporting portions P_1 at a first position. FIG. 3B shows the optical films 12 at a second position. The first position is referred to as an initial position of the housing 30, suspended on a plane IJ such that the axis Y of the optical films 12 corresponds to the axis J. The second position is in a suspended position when the housing 30 rotates with respect to the axis K from the first position to 180°.

The first and second supporting portions P_1 and P_2 penetrating the first and second holes H_1 and H_2 , respectively,

4:47-58

is constrained by a short axis of the elliptical first hole. Note that the axis C_Y is parallel to the gravity-acting direction of the optical films 12.

When the frame 15 is disposed at the first position (FIG. 3A), the first edge 21 is an upper edge of the optical film 12. The second edge 22 is a lower edge. Due to the weight of the optical film 12, the first supporting portion P_1 partially contacts an inner wall S1 of the first hole H_1 to position the optical film 12.

The symbol “ G_1 ” represents the dimension of a first gap, which is the remaining portion of the first hole H_1 subtracted from the first supporting portion P_1 . The size of the first gap

5:14-25

INTRINSIC EVIDENCE FOR DISPUTED TERM “THE SECOND SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE SECOND CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):

Additionally, the supporting portions P_3 , P_4 , P_5 , and P_6 pass through the rectangular holes H_3 , H_4 , H_5 , and H_6 with rounded corners, movable in direction I or J. Thus, at the first position, only the supporting portions P_3 , P_1 , and P_5 located at the upper edge partially contact the inner walls S_3 , S_1 , and S_5 of the holes H_3 , H_1 , and H_5 to position the optical film **12a**.

6:55-61

becomes the upper edge. The first edge **21** becomes the lower edge. The holes H_4 , H_2 , and H_6 are the constraining portions for supporting the film. Only the supporting portions P_4 , P_2 , and P_6 partially contact the inner walls of the holes H_4 , H_2 , and H_6 . Thus, other supporting portions do not support the optical films, allowing thermal expansion and contraction.

In conclusion, the pairs of holes are symmetrically defined on the optical films **12** at opposite corners, adjacent corners, or adjacent edges. The liquid crystal display of the

7:27-36

As shown in FIG. 4A, three pairs of symmetrically arranged holes, H_1' and H_1'' , H_2' and H_2'' , H_3' and H_3'' are disposed at opposite edges **21** and **22** of the optical film **12b**. When the liquid crystal display is disposed at the first position (angle 0°), only the supporting portions P_1' , P_2' , and P_3' on the frame (not shown) partially contact the inner walls of the holes H_1' , H_2' and H_3' to support the optical film **12b**.

As shown in FIG. 4B, two pairs of symmetrically arranged holes, H_4' and H_4'' and H_5' and H_5'' , are disposed

7:46-54

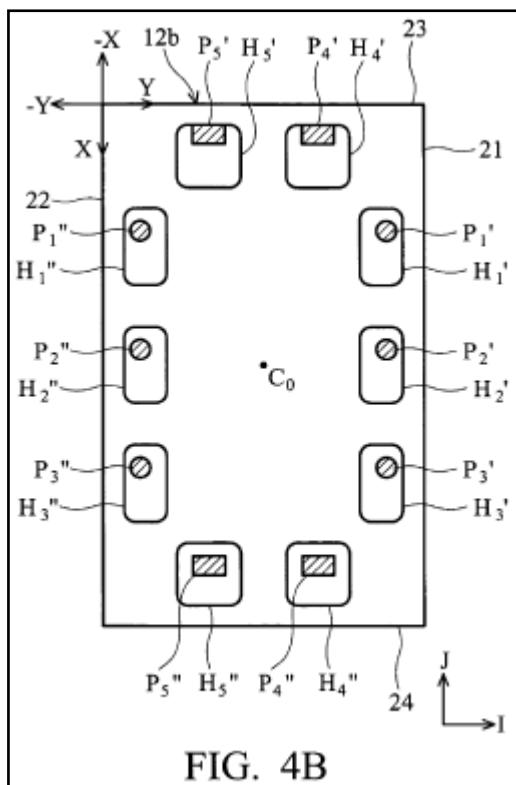
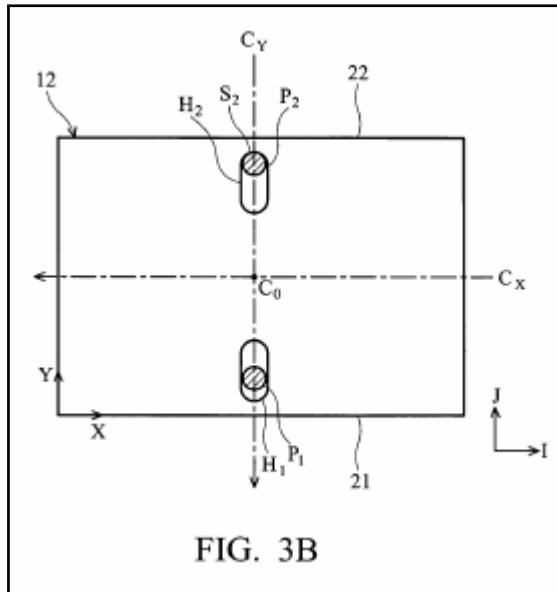
INTRINSIC EVIDENCE FOR DISPUTED TERM “THE SECOND SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE SECOND CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):

The elliptical shapes of the holes H_1 and H_2 constrain the movement range of the supporting portions P_1 and P_2 in directions I and J. When the frame **15** is disposed at the first position, the first supporting portion P_1 contacts the first hole H_1 to support the optical film **12**, and the first hole H_1 constrains the first supporting portion P_1 in direction I, thereby restricting the movement of the optical film **12** in direction I. The second supporting portion P_2 does not support the optical film **12** at the first position with the gap G_2 formed along the Y-axis. Thus, when the optical film **12** expands or contracts due to temperature variation, or when the optical film **12** is pulled by self-weight, the second supporting portion P_2 does not contact the second hole H_2 of the optical film **12**. Since there is no contact between the second supporting portion P_2 and the second hole H_2 , stress does not build therebetween. Moreover, the gaps G_1 and G_2 allow the optical films **12** to freely expand or contract, thereby preventing Mura defects.

When the frame **15** is rotated to the second position (FIG. 3B) by rotating 180°, the second edge **22** becomes the upper edge, and the first edge **21** becomes the lower edge. The second supporting portion P_2 partially contacts the inner wall S_2 of the second hole H_2 to support the optical films **12**. The gap G_2 is determined by thermal expansion coefficient of the optical film **12**, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Thus, at the second position, only the second supporting portion P_2 supports the optical film **12**. The second hole H_2 constrains the movement range of the second supporting portion P_2 in direction I. The first supporting portion P_1 does not support the optical film **12**, leaving a gap G_1 therebetween. During

5:36-67

INTRINSIC EVIDENCE FOR DISPUTED TERM “THE SECOND SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE SECOND CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):



INTRINSIC EVIDENCE FOR DISPUTED TERM “THE SECOND SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE SECOND CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):

and the second constraining portion, and the second gap is an allowance for film expansion or contraction due to temperature variation.

The first supporting portion and the second supporting portion each comprises a protrusion, a cylinder, or a cuboid.

The first and the second constraining portions are circular, elliptical, rectangular, rectangular with rounded corners, or polygonal.

2:58-65

first supporting portion constrain the movement range of the film in an extending direction of the first supporting portion.

Furthermore, when the frame is disposed at the second position, the second constraining portion and the second supporting portion constrain a movement range of the film in a direction perpendicular to a gravity-acting direction, and the frame and the second supporting portion constrain the movement range of the film in an extending direction of the second supporting portion.

In an embodiment, when the first constraining portion is elliptical, and when the frame moves to the first position or

3:3-14

As shown in FIG. 4B, two pairs of symmetrically arranged holes, H_4' and H_4'' and H_5' and H_5'' , are disposed at the opposite edges 23 and 24 of the optical film 12b. When the liquid crystal display is disposed at the second position, rotated from 0° to 90° , only the supporting portions P_4' and P_5' on the frame (not shown) partially contact the inner walls of the holes H_4' and H_5' to support the optical film 12b.

As shown in FIG. 4C, when the liquid crystal display is disposed at the third position, rotated from 0° to 180° , only

7:53-61

INTRINSIC EVIDENCE FOR DISPUTED TERM “THE SECOND SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE SECOND CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):

The elliptical shapes of the holes H_1 and H_2 constrain the movement range of the supporting portions P_1 and P_2 in directions I and J. When the frame 15 is disposed at the first position, the first supporting portion P_1 contacts the first hole H_1 to support the optical film 12, and the first hole H_1 constrains the first supporting portion P_1 in direction I, thereby restricting the movement of the optical film 12 in direction I. The second supporting portion P_2 does not support the optical film 12 at the first position with the gap G_2 formed along the Y-axis. Thus, when the optical film 12 expands or contracts due to temperature variation, or when the optical film 12 is pulled by self-weight, the second supporting portion P_2 does not contact the second hole H_2 of the optical film 12. Since there is no contact between the second supporting portion P_2 and the second hole H_2 , stress does not build therebetween. Moreover, the gaps G_1 and G_2 allow the optical films 12 to freely expand or contract, thereby preventing Mura defects.

When the frame 15 is rotated to the second position (FIG. 3B) by rotating 180°, the second edge 22 becomes the upper edge, and the first edge 21 becomes the lower edge. The second supporting portion P_2 partially contacts the inner wall S_2 of the second hole H_2 to support the optical films 12. The gap G_2 is determined by thermal expansion coefficient of the optical film 12, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Thus, at the second position, only the second supporting portion P_2 supports the optical film 12. The second hole H_2 constrains the movement range of the second supporting portion P_2 in direction I. The first supporting portion P_1 does not support the optical film 12, leaving a gap G_1 therebetween. During

5:36-67

INTRINSIC EVIDENCE FOR DISPUTED TERM “THE SECOND SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE SECOND CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):

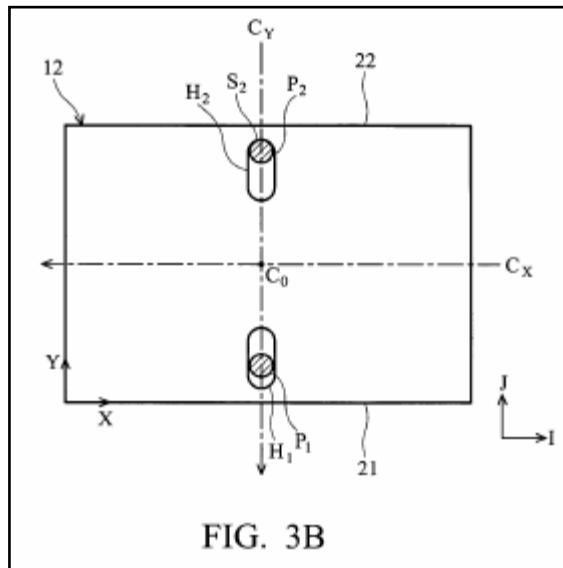


FIG. 3B

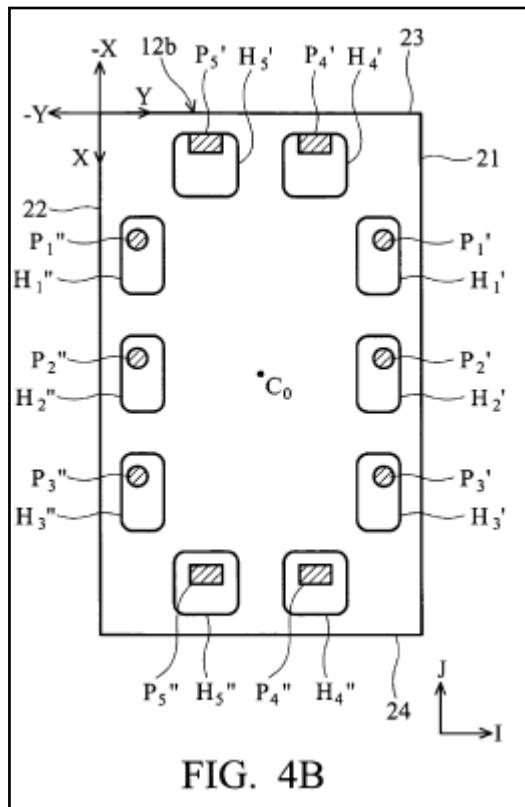


FIG. 4B

INTRINSIC EVIDENCE FOR DISPUTED TERM “THE SECOND SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE SECOND CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):

film in an extending direction of the first supporting portion.

Furthermore, when the frame is disposed at the second position, the second constraining portion and the second supporting portion constrain a movement range of the film in a direction perpendicular to a gravity-acting direction, and the frame and the second supporting portion constrain the movement range of the film in an extending direction of the second supporting portion.

In an embodiment, when the first constraining portion is elliptical, and when the frame moves to the first position or

3:4-13

FIG. 3B shows the optical films 12 at a second position. The first position is referred to as an initial position of the housing 30, suspended on a plane IJ such that the axis Y of the optical films 12 corresponds to the axis J. The second position is in a suspended position when the housing 30 rotates with respect to the axis K from the first position to 180°.

4:50-56c

INTRINSIC EVIDENCE FOR DISPUTED TERM “THE SECOND SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE SECOND CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):

The elliptical shapes of the holes H_1 and H_2 constrain the movement range of the supporting portions P_1 and P_2 in directions I and J. When the frame 15 is disposed at the first position, the first supporting portion P_1 contacts the first hole H_1 to support the optical film 12, and the first hole H_1 constrains the first supporting portion P_1 in direction I, thereby restricting the movement of the optical film 12 in direction I. The second supporting portion P_2 does not support the optical film 12 at the first position with the gap G_2 formed along the Y-axis. Thus, when the optical film 12 expands or contracts due to temperature variation, or when the optical film 12 is pulled by self-weight, the second supporting portion P_2 does not contact the second hole H_2 of the optical film 12. Since there is no contact between the second supporting portion P_2 and the second hole H_2 , stress does not build therebetween. Moreover, the gaps G_1 and G_2 allow the optical films 12 to freely expand or contract, thereby preventing Mura defects.

When the frame 15 is rotated to the second position (FIG. 3B) by rotating 180°, the second edge 22 becomes the upper edge, and the first edge 21 becomes the lower edge. The second supporting portion P_2 partially contacts the inner wall S_2 of the second hole H_2 to support the optical films 12. The gap G_2 is determined by thermal expansion coefficient of the optical film 12, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Thus, at the second position, only the second supporting portion P_2 supports the optical film 12. The second hole H_2 constrains the movement range of the second supporting portion P_2 in direction I. The first supporting portion P_1 does not support the optical film 12, leaving a gap G_1 therebetween. During

5:36-67

EXHIBIT 18
U.S. PATENT NO. 7,125,157
TERMS IN DISPUTE

What is claimed is:

1. A backlight unit for a liquid crystal display, comprising:
a frame;
a first supporting portion, disposed on the frame;
a second supporting portion, further disposed on the frame; and
a film comprising a first constraining portion and a second constraining portion, positioned on the frame by the first supporting portion and the second supporting portion passing through the first constraining portion and the second constraining portion, respectively;
when the frame is disposed in a first position, the first supporting portion partially contacts an inner wall of the first constraining portion for positioning the film, and the second supporting portion does not contact the second constraining portion; and
when the frame is disposed in a second position, the second supporting portion partially contacts an inner wall of the second constraining portion for positioning the film and the first supporting portion does not contact the first constraining portion.

a first constraining portion¹-
a first passage through the film that has a gap in the gravity acting direction after receiving a supporting portion

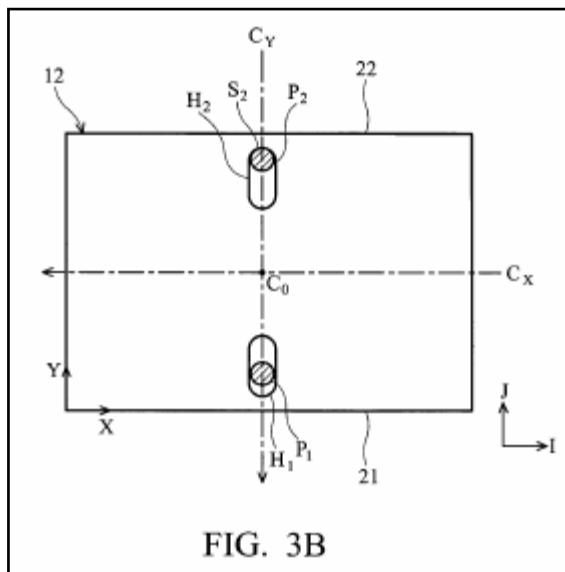
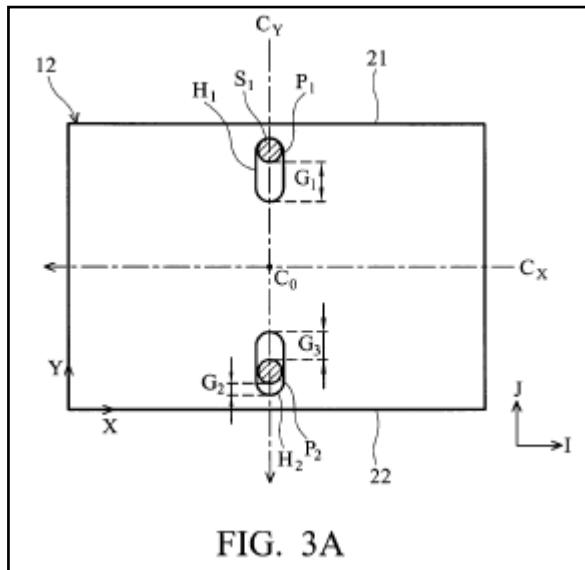
constraining portion- a passage through the film that has a gap in the gravity acting direction after receiving a supporting portion

a second constraining portion²- a second passage through the film that has a gap in the gravity acting direction after receiving a supporting portion

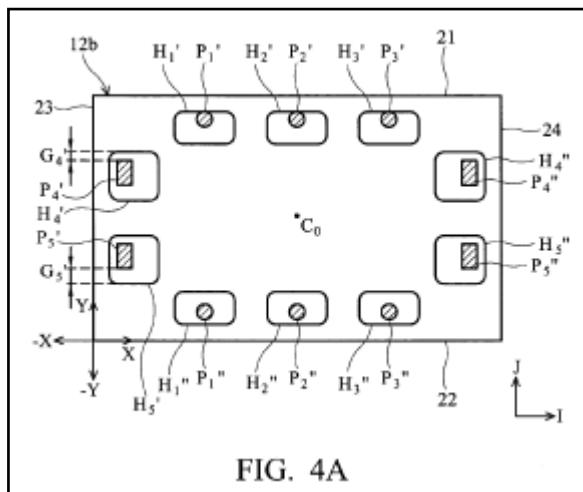
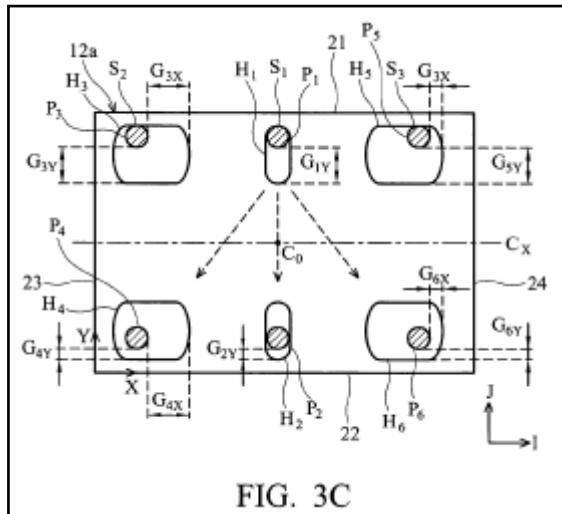
¹ Disputed Term “a first constraining portion” also appears in asserted claim 16 in the same context.

² Disputed Term “a second constraining portion” also appears in asserted claim 16 in the same context.

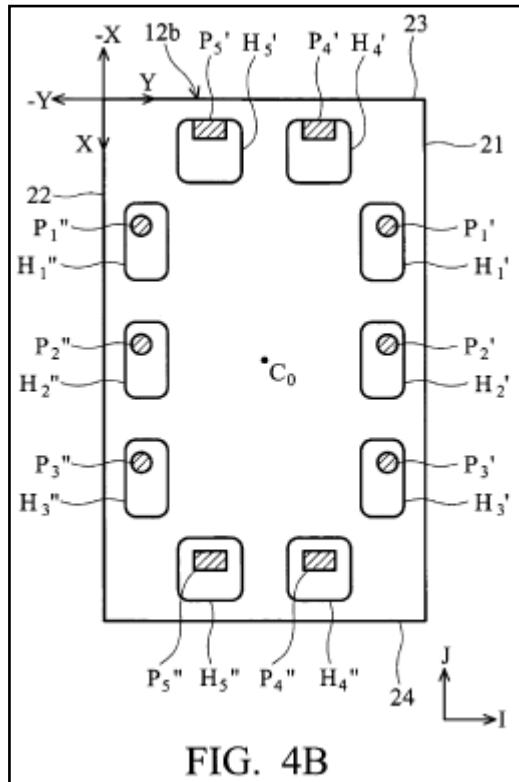
INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST CONSTRAINING PORTION”, “CONSTRAINING PORTION” AND “A SECOND CONSTRAINING PORTION”:



INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST CONSTRAINING PORTION”, “CONSTRAINING PORTION” AND “A SECOND CONSTRAINING PORTION” (cont’d):



INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST CONSTRAINING PORTION,” “CONSTRAINING PORTION” AND “A SECOND CONSTRAINING PORTION” (cont’d):



INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST CONSTRAINING PORTION,” “CONSTRAINING PORTION” AND “A SECOND CONSTRAINING PORTION” (cont’d):

The first supporting portion and the second supporting portion each comprises a protrusion, a cylinder, or a cuboid.

The first and the second constraining portions are circular, elliptical, rectangular, rectangular with rounded corners, or polygonal.

When the frame is disposed at the first position, the first

2:61-66

elliptical, rectangular, rectangular with rounded corners, or polygonal.

When the frame is disposed at the first position, the first constraining portion and the first supporting portion con-

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strain a movement range of the film in a direction perpendicular to a gravity-acting direction, and the frame and the first supporting portion constrain the movement range of the film in an extending direction of the first supporting portion.

Furthermore, when the frame is disposed at the second position, the second constraining portion and the second

2:64-3:6

The symbol “ G_1 ” represents the dimension of a first gap, which is the remaining portion of the first hole H_1 subtracted from the first supporting portion P_1 . The size of the first gap G_1 is determined by the thermal expansion coefficient of the optical film 12, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Similarly, the gaps G_2 and G_3 are the gaps between the second hole H_2 and the second supporting portion P_2 , depending on thermal expansion coefficient of the optical film 12, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Thus, the gaps G_1 , G_2 , and G_3 provide allowance for film expansion and contraction due to temperature variation.

5:23-35

INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST CONSTRAINING PORTION,” “CONSTRAINING PORTION” AND “A SECOND CONSTRAINING PORTION” (cont’d):

The elliptical shapes of the holes H_1 and H_2 constrain the movement range of the supporting portions P_1 and P_2 in directions I and J. When the frame 15 is disposed at the first position, the first supporting portion P_1 contacts the first hole H_1 to support the optical film 12, and the first hole H_1 constrains the first supporting portion P_1 in direction I, thereby restricting the movement of the optical film 12 in direction I. The second supporting portion P_2 does not support the optical film 12 at the first position with the gap G_2 formed along the Y-axis. Thus, when the optical film 12 expands or contracts due to temperature variation, or when the optical film 12 is pulled by self-weight, the second supporting portion P_2 does not contact the second hole H_2 of the optical film 12. Since there is no contact between the second supporting portion P_2 and the second hole H_2 , stress does not build therebetween. Moreover, the gaps G_1 and G_2 allow the optical films 12 to freely expand or contract, thereby preventing Mura defects.

When the frame 15 is rotated to the second position (FIG. 3B) by rotating 180°, the second edge 22 becomes the upper edge, and the first edge 21 becomes the lower edge. The second supporting portion P_2 partially contacts the inner wall S_2 of the second hole H_2 to support the optical films 12. The gap G_2 is determined by thermal expansion coefficient of the optical film 12, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Thus, at the second position, only the second supporting portion P_2 supports the optical film 12. The second hole H_2 constrains the movement range of the second supporting portion P_2 in direction I. The first supporting portion P_1 does not support the optical film 12, leaving a gap G_1 therebetween. During

5:36-67

INTRINSIC EVIDENCE FOR DISPUTED TERMS “A FIRST CONSTRAINING PORTION,” “CONSTRAINING PORTION” AND “A SECOND CONSTRAINING PORTION” (cont’d):

comprising the fifth hole H₅ and the sixth hole H₆ are respectively defined on the adjacent corners of the edge 24 of the optical film 12a. When the liquid crystal display is suspended at the first position, the holes H₃, H₁, and H₅ at the edge 21 of the optical film 12a become the constraining portions to restrict the movement of the optical film 12a. The edge 21 becomes an upper edge and the other holes H₄, H₂, and H₆ are located at the opposite edge 22, the lower edge.

6:20-27

are elliptical. The third, fourth, fifth, and sixth holes H₃, H₄, H₅, and H₆ are rectangular with rounded corners, different from the first and the second holes.

The shapes of the holes determine the movable range of the supporting portions, thereby constraining the supporting portions.

Since the holes H₁ and H₂ are elliptical, the short axes of the holes H₁ and H₂ are slightly larger than the radii of the

6:44-51

EXHIBIT 18
U.S. PATENT NO. 7,125,157
TERMS IN DISPUTE

ASSERTED CLAIM 1

1. A backlight unit for a liquid crystal display, comprising:
a frame;
a first supporting portion, disposed on the frame;
a second supporting portion, further disposed on the frame; and
a film comprising a first constraining portion and a second constraining portion, positioned on the frame by the first supporting portion and the second supporting portion passing through the first constraining portion and the second constraining portion, respectively;
when the frame is disposed in a first position, the first supporting portion partially contacts an inner wall of the first constraining portion for positioning the film, and the second supporting portion does not contact the second constraining portion; and
when the frame is disposed in a second position, the second supporting portion partially contacts an inner wall of the second constraining portion for positioning the film and the first supporting portion does not contact the first constraining portion.

LGD's Claim Construction

disposed in a first position¹ -
in an orientation where the first projection is located near an upper edge of the frame

first position - see above

the first supporting portion partially contacts an inner wall of the constraining portion for positioning the film - the first projection touches a top portion of the first passage to support the film and has a gap below the first projection

does not contact - does not touch

disposed in a second position² -
in an orientation rotated from the first position so that the second projection is located near an upper edge of the frame

second position - see above

¹ Disputed Term “disposed in a first position” also appears in asserted claim 16 in the same context.

² Disputed Term “disposed in a second position” also appears in asserted claim 16 in the same context.

INTRINSIC EVIDENCE FOR DISPUTED TERMS “DISPOSED IN A FIRST POSITION” AND “FIRST POSITION”:

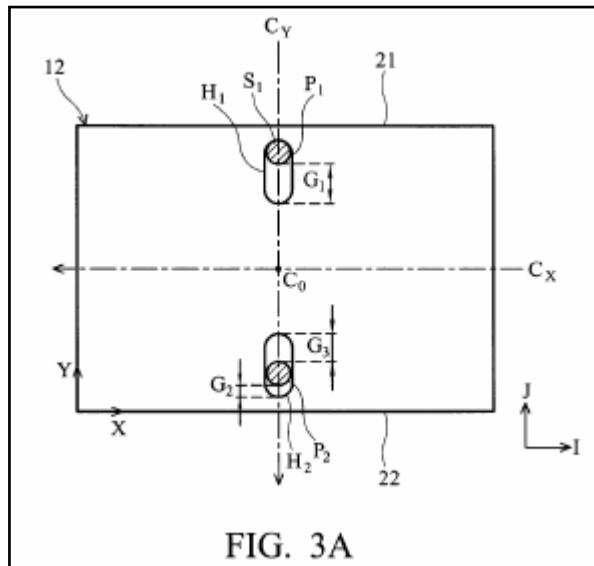


FIG. 3A

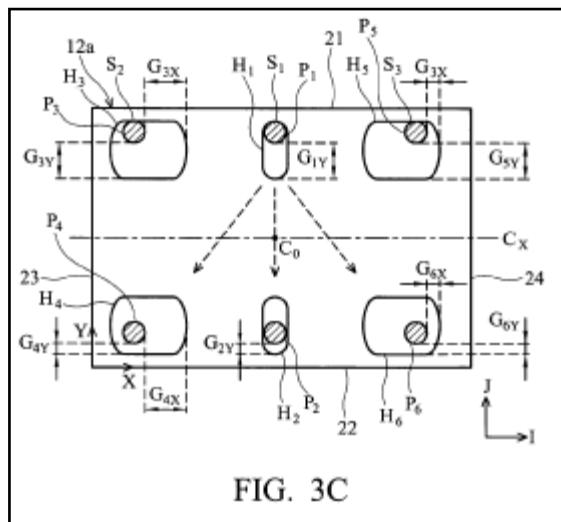


FIG. 3C

INTRINSIC EVIDENCE FOR DISPUTED TERMS “DISPOSED IN A FIRST POSITION” AND “FIRST POSITION” (cont’d):

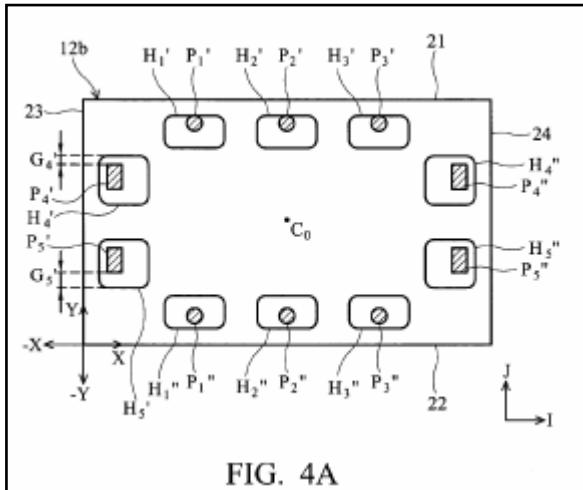


FIG. 4A

elliptical, rectangular, rectangular with rounded corners, or polygonal.

When the frame is disposed at the first position, the first constraining portion and the first supporting portion con-

strain a movement range of the film in a direction perpendicular to a gravity-acting direction, and the frame and the first supporting portion constrain the movement range of the film in an extending direction of the first supporting portion.

Furthermore, when the frame is disposed at the second position, the second constraining portion and the second

2:64-3:6

that the axis C_y is parallel to the gravity-acting direction of the optical films 12.

When the frame 15 is disposed at the first position (FIG. 3A), the first edge 21 is an upper edge of the optical film 12. The second edge 22 is a lower edge. Due to the weight of the optical film 12, the first supporting portion P_1 partially contacts an inner wall $S1$ of the first hole H_1 to position the optical film 12.

5:15-22

INTRINSIC EVIDENCE FOR DISPUTED TERMS “DISPOSED IN A FIRST POSITION” AND “FIRST POSITION” (cont’d):

The elliptical shapes of the holes H_1 and H_2 constrain the movement range of the supporting portions P_1 and P_2 in directions I and J. When the frame 15 is disposed at the first position, the first supporting portion P_1 contacts the first hole H_1 to support the optical film 12, and the first hole H_1 constrains the first supporting portion P_1 in direction I, thereby restricting the movement of the optical film 12 in direction I. The second supporting portion P_2 does not support the optical film 12 at the first position with the gap G_2 formed along the Y-axis. Thus, when the optical film 12 expands or contracts due to temperature variation, or when the optical film 12 is pulled by self-weight, the second supporting portion P_2 does not contact the second hole H_2 of the optical film 12. Since there is no contact between the second supporting portion P_2 and the second hole H_2 , stress does not build therebetween. Moreover, the gaps G_1 and G_2 allow the optical films 12 to freely expand or contract, thereby preventing Mura defects.

When the frame 15 is rotated to the second position (FIG. 3B) by rotating 180°, the second edge 22 becomes the upper edge, and the first edge 21 becomes the lower edge. The second supporting portion P_2 partially contacts the inner wall S_2 of the second hole H_2 to support the optical films 12. The gap G_2 is determined by thermal expansion coefficient of the optical film 12, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Thus, at the second position, only the second supporting portion P_2 supports the optical film 12. The second hole H_2 constrains the movement range of the second supporting portion P_2 in direction I. The first supporting portion P_1 does not support the optical film 12, leaving a gap G_1 therebetween. During

5:36-67

As shown in FIG. 4A, three pairs of symmetrically arranged holes, H_1' and H_1'' , H_2' and H_2'' , H_3' and H_3'' are disposed at opposite edges 21 and 22 of the optical film 12b. When the liquid crystal display is disposed at the first position (angle 0°), only the supporting portions P_1' , P_2' , and P_3' on the frame (not shown) partially contact the inner walls of the holes H_1' , H_2' and H_3' to support the optical film 12b.

7:46-52

INTRINSIC EVIDENCE FOR DISPUTED TERM “THE FIRST SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE FIRST CONSTRAINING PORTION FOR POSITIONING THE FILM”:

an allowance for film expansion or contraction due to temperature variation.

The first supporting portion and the second supporting portion each comprises a protrusion, a cylinder, or a cuboid.

The first and the second constraining portions are circular, elliptical, rectangular, rectangular with rounded corners, or polygonal.

2:59-65

elliptical, rectangular, rectangular with rounded corners, or polygonal.

When the frame is disposed at the first position, the first constraining portion and the first supporting portion con-

~

strain a movement range of the film in a direction perpendicular to a gravity-acting direction, and the frame and the first supporting portion constrain the movement range of the film in an extending direction of the first supporting portion.

Furthermore, when the frame is disposed at the second position, the second constraining portion and the second

2:66-3:4

of the supporting portions. The holes are formed along the gravity-acting directions of the frame 15 and the housing 30.

The supporting portion P₁ comprises plastics, metal or other materials. The supporting portion P₁ protrudes from the frame 15, correspondingly passing through the hole H₁ on the optical films 12 to position optical films 12 on the frame 15. Since the embodiments of the invention focus on

4:15-21

INTRINSIC EVIDENCE FOR DISPUTED TERM “THE FIRST SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE FIRST CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):

10. FIG. 3B is a schematic view of a variation of FIG. 3A.

In FIG. 3A, the optical films 12 are connected to the frame (not shown) via the supporting portions P_1 at a first position. FIG. 3B shows the optical films 12 at a second position. The first position is referred to as an initial position of the housing 30, suspended on a plane IJ such that the axis Y of the optical films 12 corresponds to the axis J. The second position is in a suspended position when the housing 30 rotates with respect to the axis K from the first position to 180°.

The first and second supporting portions P_1 and P_2 penetrating the first and second holes H_1 and H_2 , respectively,

4:47-58

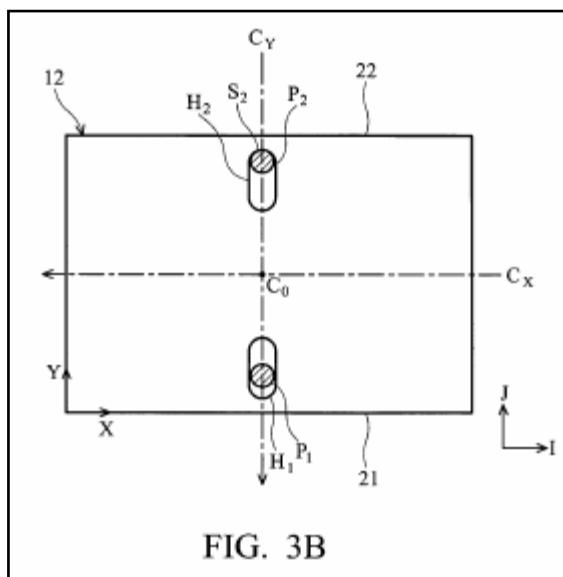
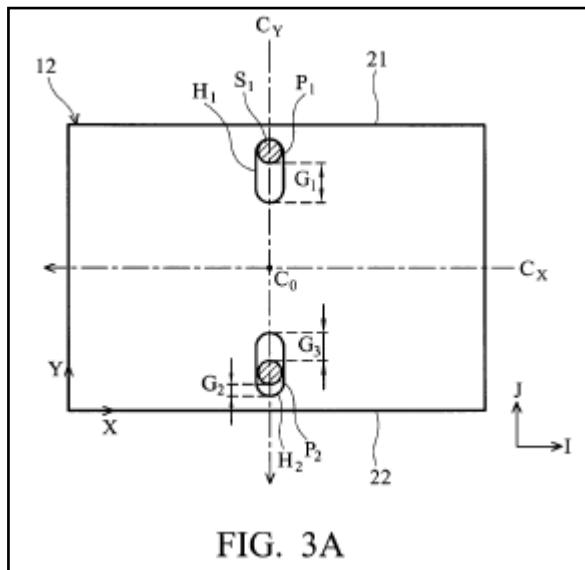
is constrained by a short axis of the elliptical first hole. Note that the axis C_y is parallel to the gravity-acting direction of the optical films 12.

When the frame 15 is disposed at the first position (FIG. 3A), the first edge 21 is an upper edge of the optical film 12. The second edge 22 is a lower edge. Due to the weight of the optical film 12, the first supporting portion P_1 partially contacts an inner wall S1 of the first hole H_1 to position the optical film 12.

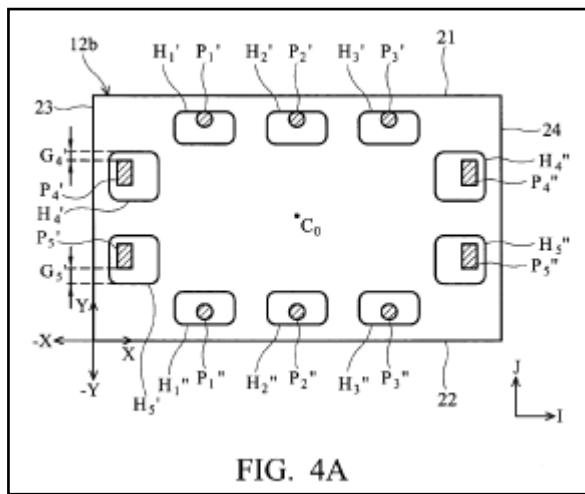
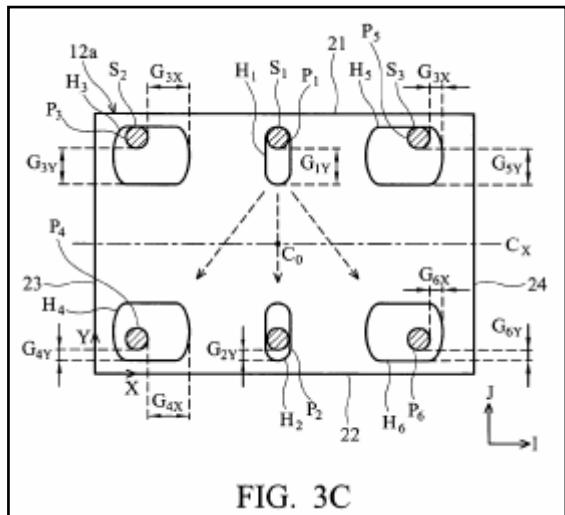
The symbol “ G_1 ” represents the dimension of a first gap, which is the remaining portion of the first hole H_1 subtracted from the first supporting portion P_1 . The size of the first gap

5:14-25

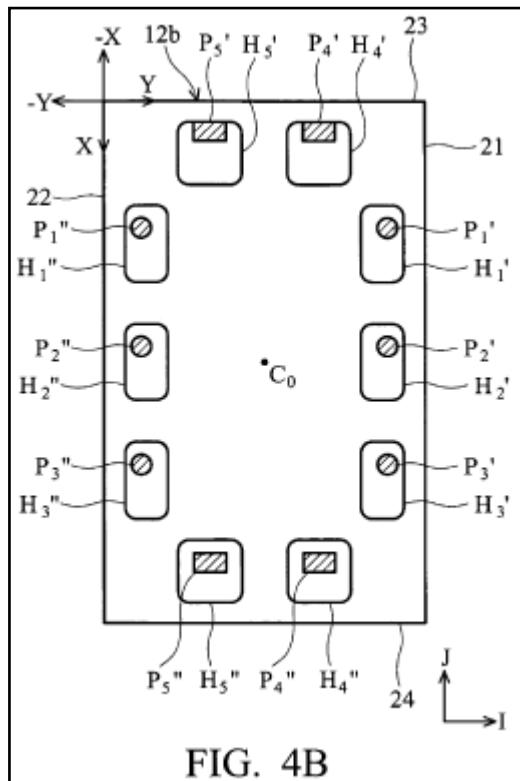
INTRINSIC EVIDENCE FOR DISPUTED TERM “THE FIRST SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE FIRST CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):



INTRINSIC EVIDENCE FOR DISPUTED TERM “THE FIRST SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE FIRST CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):



INTRINSIC EVIDENCE FOR DISPUTED TERM “THE FIRST SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE FIRST CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):



INTRINSIC EVIDENCE FOR DISPUTED TERM “THE FIRST SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE FIRST CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):

that the axis C_Y is parallel to the gravity-acting direction of the optical films 12.

When the frame 15 is disposed at the first position (FIG. 3A), the first edge 21 is an upper edge of the optical film 12. The second edge 22 is a lower edge. Due to the weight of the optical film 12, the first supporting portion P_1 partially contacts an inner wall S_1 of the first hole H_1 to position the optical film 12.

5:15-22

The elliptical shapes of the holes H_1 and H_2 constrain the movement range of the supporting portions P_1 and P_2 in directions I and J. When the frame 15 is disposed at the first position, the first supporting portion P_1 contacts the first hole H_1 to support the optical film 12, and the first hole H_1 constrains the first supporting portion P_1 in direction I, thereby restricting the movement of the optical film 12 in direction I. The second supporting portion P_2 does not support the optical film 12 at the first position with the gap G_2 formed along the Y-axis. Thus, when the optical film 12 expands or contracts due to temperature variation, or when the optical film 12 is pulled by self-weight, the second supporting portion P_2 does not contact the second hole H_2 of the optical film 12. Since there is no contact between the second supporting portion P_2 and the second hole H_2 , stress does not build therebetween. Moreover, the gaps G_1 and G_2 allow the optical films 12 to freely expand or contract, thereby preventing Mura defects.

When the frame 15 is rotated to the second position (FIG. 3B) by rotating 180°, the second edge 22 becomes the upper edge, and the first edge 21 becomes the lower edge. The second supporting portion P_2 partially contacts the inner wall S_2 of the second hole H_2 to support the optical films 12. The gap G_2 is determined by thermal expansion coefficient of the optical film 12, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Thus, at the second position, only the second supporting portion P_2 supports the optical film 12. The second hole H_2 constrains the movement range of the second supporting portion P_2 in direction I. The first supporting portion P_1 does not support the optical film 12, leaving a gap G_1 therebetween. During

5:36-67

INTRINSIC EVIDENCE FOR DISPUTED TERM “THE FIRST SUPPORTING PORTION PARTIALLY CONTACTS AN INNER WALL OF THE FIRST CONSTRAINING PORTION FOR POSITIONING THE FILM” (cont’d):

comprising the fifth hole H_5 and the sixth hole H_6 are respectively defined on the adjacent corners of the edge 24 of the optical film 12a. When the liquid crystal display is suspended at the first position, the holes H_3 , H_1 , and H_5 at the edge 21 of the optical film 12a become the constraining portions to restrict the movement of the optical film 12a. The edge 21 becomes an upper edge and the other holes H_4 , H_2 , and H_6 are located at the opposite edge 22, the lower edge.

6:20-27

are elliptical. The third, fourth, fifth, and sixth holes H_3 , H_4 , H_5 , and H_6 are rectangular with rounded corners, different from the first and the second holes.

The shapes of the holes determine the movable range of the supporting portions, thereby constraining the supporting portions.

Since the holes H_1 and H_2 are elliptical, the short axes of the holes H_1 and H_2 are slightly larger than the radii of the

6:44-51

As shown in FIG. 4A, three pairs of symmetrically arranged holes, H_1' and H_1'' , H_2' and H_2'' , H_3' and H_3'' are disposed at opposite edges 21 and 22 of the optical film 12b. When the liquid crystal display is disposed at the first position (angle 0°), only the supporting portions P_1' , P_2' , and P_3' on the frame (not shown) partially contact the inner walls of the holes H_1' , H_2' and H_3' to support the optical film 12b.

7:46-52

INTRINSIC EVIDENCE FOR DISPUTED TERM “DOES NOT CONTACT”:

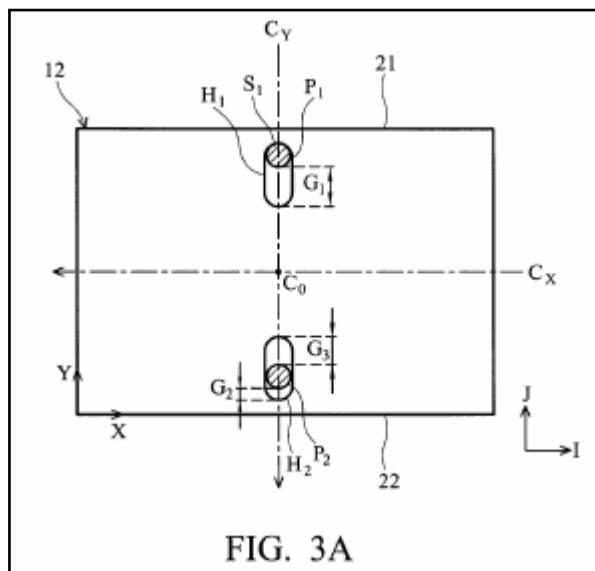


FIG. 3A

INTRINSIC EVIDENCE FOR DISPUTED TERM “DOES NOT CONTACT” (cont’d):

The elliptical shapes of the holes H_1 and H_2 constrain the movement range of the supporting portions P_1 and P_2 in directions I and J. When the frame 15 is disposed at the first position, the first supporting portion P_1 contacts the first hole H_1 to support the optical film 12, and the first hole H_1 constrains the first supporting portion P_1 in direction I, thereby restricting the movement of the optical film 12 in direction I. The second supporting portion P_2 does not support the optical film 12 at the first position with the gap G_2 formed along the Y-axis. Thus, when the optical film 12 expands or contracts due to temperature variation, or when the optical film 12 is pulled by self-weight, the second supporting portion P_2 does not contact the second hole H_2 of the optical film 12. Since there is no contact between the second supporting portion P_2 and the second hole H_2 , stress does not build therebetween. Moreover, the gaps G_1 and G_2 allow the optical films 12 to freely expand or contract, thereby preventing Mura defects.

When the frame 15 is rotated to the second position (FIG. 3B) by rotating 180°, the second edge 22 becomes the upper edge, and the first edge 21 becomes the lower edge. The second supporting portion P_2 partially contacts the inner wall S_2 of the second hole H_2 to support the optical films 12. The gap G_2 is determined by thermal expansion coefficient of the optical film 12, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Thus, at the second position, only the second supporting portion P_2 supports the optical film 12. The second hole H_2 constrains the movement range of the second supporting portion P_2 in direction I. The first supporting portion P_1 does not support the optical film 12, leaving a gap G_1 therebetween. During

5:36-67

lower edge. The holes H_4 , H_2 , and H_6 are the constraining portions for supporting the film. Only the supporting portions P_4 , P_2 , and P_6 partially contact the inner walls of the holes H_4 , H_2 , and H_6 . Thus, other supporting portions do not support the optical films, allowing thermal expansion and contraction.

In conclusion, the pairs of holes are symmetrically defined on the optical films 12 at opposite corners, adjacent

7:28-35

INTRINSIC EVIDENCE FOR DISPUTED TERM “DOES NOT CONTACT” (cont’d):

supporting portion in both directions X and Y. The gaps are determined by thermal expansion coefficient of the optical films, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Thus, when rotating the liquid crystal display, the gaps are the allowable movement range for the supporting portions, preventing direct contact between the holes and the supporting portions. Thus, stress concentration is prevented. The optical films may freely expand or contract without causing Mura defects.

8:5-13

EXTRINSIC EVIDENCE FOR DISPUTED TERM “DOES NOT CONTACT”:

¹con-tact \kän-,takt\ *n* [F or L; F, fr. L *contactus*, fr. *contingere* to have contact with — more at **CONTINGENT**] (1626) **1** **a** : union or junction of surfaces **b** : the apparent touching or mutual tangency of the limbs of two celestial bodies or of the disk of one body with the shadow of another during an eclipse, transit, or occultation **c** (1) : the junction of two electrical conductors through which a current passes (2) : a special part made for such a junction **2** **a** : ASSOCIATION, RELATIONSHIP **b** : CONNECTION, COMMUNICATION **c** : an establishing of communication with someone or an observing or receiving of a significant signal from a person or object (radar \sim with Mars) **3** : a person serving as a go-between, messenger, connection, or source of special information (business \sim s) **4** : CONTACT LENS
²con-tact \kän-,takt, kän-\ *vi* (1834) : to make contact \sim *vt* **1** : to bring into contact **2** **a** : to enter or be in contact with : JOIN **b** : to get in communication with (\sim your local dealer)
usage The use of *contact* as a verb, esp. in sense 2b, is accepted as standard by almost all commentators except those who write college handbooks.
³con-tact \kän-,takt\ *adj* (1859) : maintaining, involving, or activated or caused by contact (\sim poisons) (\sim sports)

Merriam-Webster's Collegiate Dictionary, Tenth Edition, (1994), p. 249

INTRINSIC EVIDENCE FOR DISPUTED TERMS “DISPOSED IN A SECOND POSITION” AND “SECOND POSITION”:

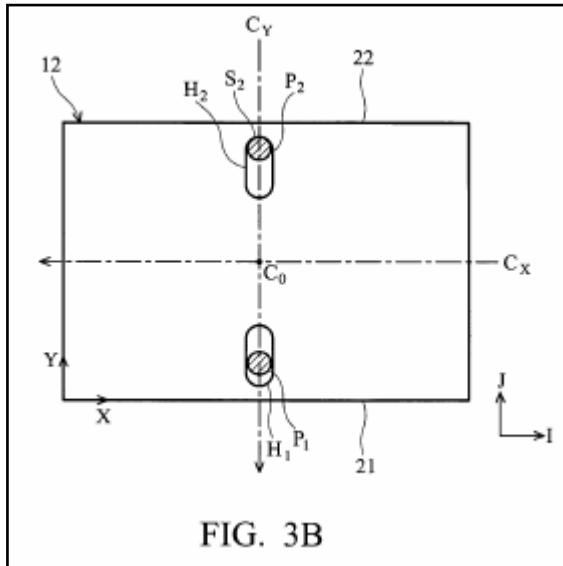


FIG. 3B

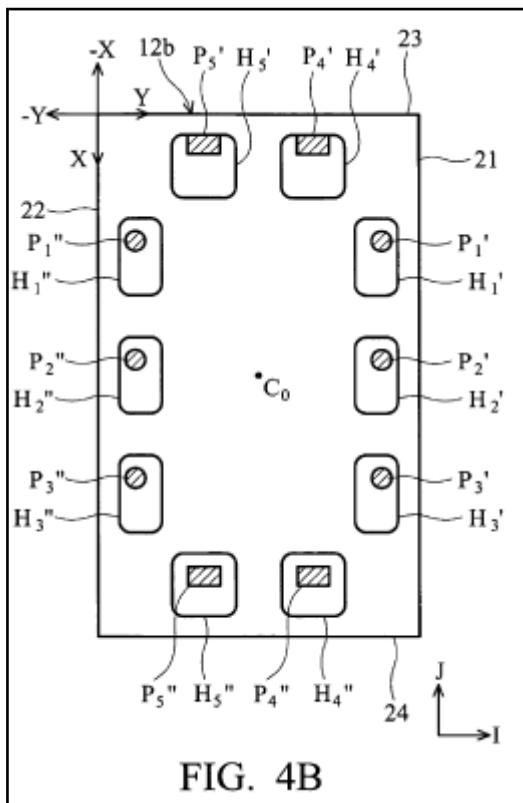


FIG. 4B

INTRINSIC EVIDENCE FOR DISPUTED TERMS “DISPOSED IN A SECOND POSITION” AND “SECOND POSITION” (cont’d):

film in an extending direction of the first supporting portion.

Furthermore, when the frame is disposed at the second position, the second constraining portion and the second supporting portion constrain a movement range of the film in a direction perpendicular to a gravity-acting direction, and the frame and the second supporting portion constrain the movement range of the film in an extending direction of the second supporting portion.

In an embodiment, when the first constraining portion is elliptical, and when the frame moves to the first position or

3:4-13

FIG. 3B shows the optical films 12 at a second position. The first position is referred to as an initial position of the housing 30, suspended on a plane IJ such that the axis Y of the optical films 12 corresponds to the axis J. The second position is in a suspended position when the housing 30 rotates with respect to the axis K from the first position to 180°.

4:50-56c

**INTRINSIC EVIDENCE FOR DISPUTED TERMS “DISPOSED IN A
SECOND POSITION” AND “SECOND POSITION” (cont’d):**

The elliptical shapes of the holes H_1 and H_2 constrain the movement range of the supporting portions P_1 and P_2 in directions I and J. When the frame 15 is disposed at the first position, the first supporting portion P_1 contacts the first hole H_1 to support the optical film 12, and the first hole H_1 constrains the first supporting portion P_1 in direction I, thereby restricting the movement of the optical film 12 in direction I. The second supporting portion P_2 does not support the optical film 12 at the first position with the gap G_2 formed along the Y-axis. Thus, when the optical film 12 expands or contracts due to temperature variation, or when the optical film 12 is pulled by self-weight, the second supporting portion P_2 does not contact the second hole H_2 of the optical film 12. Since there is no contact between the second supporting portion P_2 and the second hole H_2 , stress does not build therebetween. Moreover, the gaps G_1 and G_2 allow the optical films 12 to freely expand or contract, thereby preventing Mura defects.

When the frame 15 is rotated to the second position (FIG. 3B) by rotating 180°, the second edge 22 becomes the upper edge, and the first edge 21 becomes the lower edge. The second supporting portion P_2 partially contacts the inner wall S_2 of the second hole H_2 to support the optical films 12. The gap G_2 is determined by thermal expansion coefficient of the optical film 12, panel temperature, room temperature, manufacturing tolerance, and modeling tolerance. Thus, at the second position, only the second supporting portion P_2 supports the optical film 12. The second hole H_2 constrains the movement range of the second supporting portion P_2 in direction I. The first supporting portion P_1 does not support the optical film 12, leaving a gap G_1 therebetween. During

5:36-67

EXHIBIT 18
U.S. PATENT NO. 7,125,157
TERMS IN DISPUTE

ASSERTED CLAIM 4

4. The backlight unit as claimed in claim 3, further comprising a third constraining portion and a fourth constraining portion disposed on the frame, and the film further comprises a third constraining portion and a fourth constraining portion respectively formed **on opposite corners of the film**; and the third constraining portion and the fourth constraining portion pass through the first constraining portion and the second constraining portion, respectively.

LGD's Claim Construction

on opposite corners of the film¹ - through areas where two edges of the film intersect such that the areas do not share an edge of the film

ASSERTED CLAIM 5

5. The backlight unit as claimed in claim 3, further comprising a third constraining portion and a fourth constraining portion disposed on the frame, and the film further comprises a third constraining portion and a fourth constraining portion respectively formed **on adjacent corners of the film**; and the third constraining portion and the fourth constraining portion pass through the first constraining portion and the second constraining portion, respectively.

on adjacent corners of the film² - through areas where two edges of the film intersect such that the areas share one edge of film

¹ Disputed Term “on opposite corner of the film” also appears in asserted claim 6 and 20 in the same context.

² Disputed Term “on adjacent corner of the film” also appears in asserted claim 21 in the same context.

INTRINSIC EVIDENCE FOR DISPUTED TERM “ON OPPOSITE CORNERS OF THE FILM”:

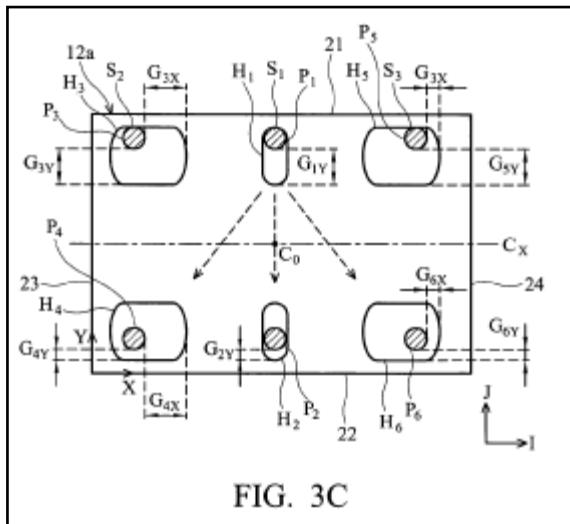


FIG. 3C

The first constraining portion and the second constraining portion are respectively formed on opposite corners of the film or on adjacent corners of the film.

The first and second constraining portions are symmetrically arranged with respect to a center point of the film.

2:46-51

7:34-38

In conclusion, the pairs of holes are symmetrically defined on the optical films 12 at opposite corners, adjacent corners, or adjacent edges. The liquid crystal display of the embodiments of the invention can freely rotate from 0° to 360° without causing Mura defects.

EXTRINSIC EVIDENCE FOR DISPUTED TERM “ON OPPOSITE CORNERS OF THE FILM”:

op·po·site \ə-pə-zət, ə-pə-sət\ *adj* [ME, fr. MF, fr. L *oppositus*, pp. of *opponere*] (14c) 1 **a** : set over against something that is at the other end or side of an intervening line or space (⟨~ interior angles⟩) (⟨~ ends of a diameter⟩) **b** : situated in pairs on an axis with each member being separated from the other by half the circumference of the axis (⟨~ leaves⟩) — compare ALTERNATE 2 **a** : occupying an opposing and often antagonistic position (⟨~ sides of the question⟩) **b** : diametrically different (as in nature or character) (⟨~ meanings⟩) 3 : contrary to one another or to a thing specified : REVERSE (gave them ~ directions) 4 : being the other of a pair that are corresponding or complementary in position, function, or nature (members of the ~ sex) 5 : of, relating to, or being the side of a baseball field that is near the first base line for a right-handed batter and near the third base line for a left-handed batter — **op·po·site·ly** *adv* — **op·po·site·ness** *n*

syn OPPOSITE. CONTRADICTORY, CONTRARY, ANTITHETICAL mean being so far apart as to be or seem irreconcilable. OPPOSITE applies to things in sharp contrast or in conflict (*opposite* views on foreign aid). CONTRADICTORY applies to two things that completely negate each other so that if one is true or valid the other must be untrue or invalid (made *contradictory* predictions about whether the market would rise or fall). CONTRARY implies extreme divergence or diametrical opposition (*contrary* assessments of the war situation). ANTITHETICAL stresses clear and unequivocal diametrical opposition (a law that is *antithetical* to the very idea of democracy).

Merriam-Webster's Collegiate Dictionary, Tenth Edition, (1994), p. 816

INTRINSIC EVIDENCE FOR DISPUTED TERM “ON ADJACENT CORNERS OF THE FILM”:

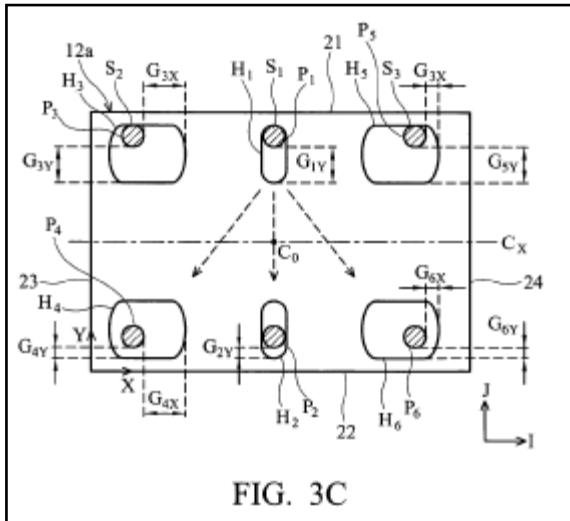


FIG. 3C

In conclusion, the pairs of holes are symmetrically defined on the optical films 12 at opposite corners, adjacent corners, or adjacent edges. The liquid crystal display of the embodiments of the invention can freely rotate from 0° to 360° without causing Mura defects.

7:34-38

EXTRINSIC EVIDENCE FOR DISPUTED TERM “ON ADJACENT CORNERS OF THE FILM”:

ad·ja·cent \ə-'jā-sənt\ *adj* [ME, fr. MF or L; MF, fr. L *adjacent-*, *adjacens*, prp. of *adjacēre* to lie near, fr. *ad-* + *jacēre* to lie; akin to L *jacere* to throw — more at *JET*] (15c) **1** **a** : not distant : NEARBY (the city and ~ suburbs) **b** : having a common endpoint or border (~ lots) (~ sides of a triangle) **c** : immediately preceding or following **2** of two angles : having the vertex and one side in common — **ad·ja·cent-ly** *adv*

syn ADJACENT, ADJOINING, CONTIGUOUS, JUXTAPOSED mean being in close proximity. ADJACENT may or may not imply contact but always implies absence of anything of the same kind in between (a house with an *adjacent* garage). ADJOINING definitely implies meeting and touching at some point or line (had *adjoining* rooms at the hotel). CONTIGUOUS implies having contact on all or most of one side (offices in all 48 *contiguous* states). JUXTAPOSED means placed side by side esp. so as to permit comparison and contrast (a skyscraper *juxtaposed* to a church).

Merriam-Webster's Collegiate Dictionary, Tenth Edition, (1994), p. 14

EXHIBIT L-19(a)

Merriam
Webster's
Collegiate
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TENTH EDITION



Merriam- Webster's Collegiate® Dictionary

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Library of Congress Cataloging in Publication Data
Main entry under title:

Merriam-Webster's collegiate dictionary. — 10th ed.

p. cm.

ISBN 0-87779-708-0 (unindexed). — ISBN 0-87779-709-9 (indexed).
— ISBN 0-87779-710-2 (deluxe). — ISBN 0-87779-707-2 (laminated cover).
1. English language—Dictionaries.

PE1628.M36 1994
423—dc20

93-32603
CIP

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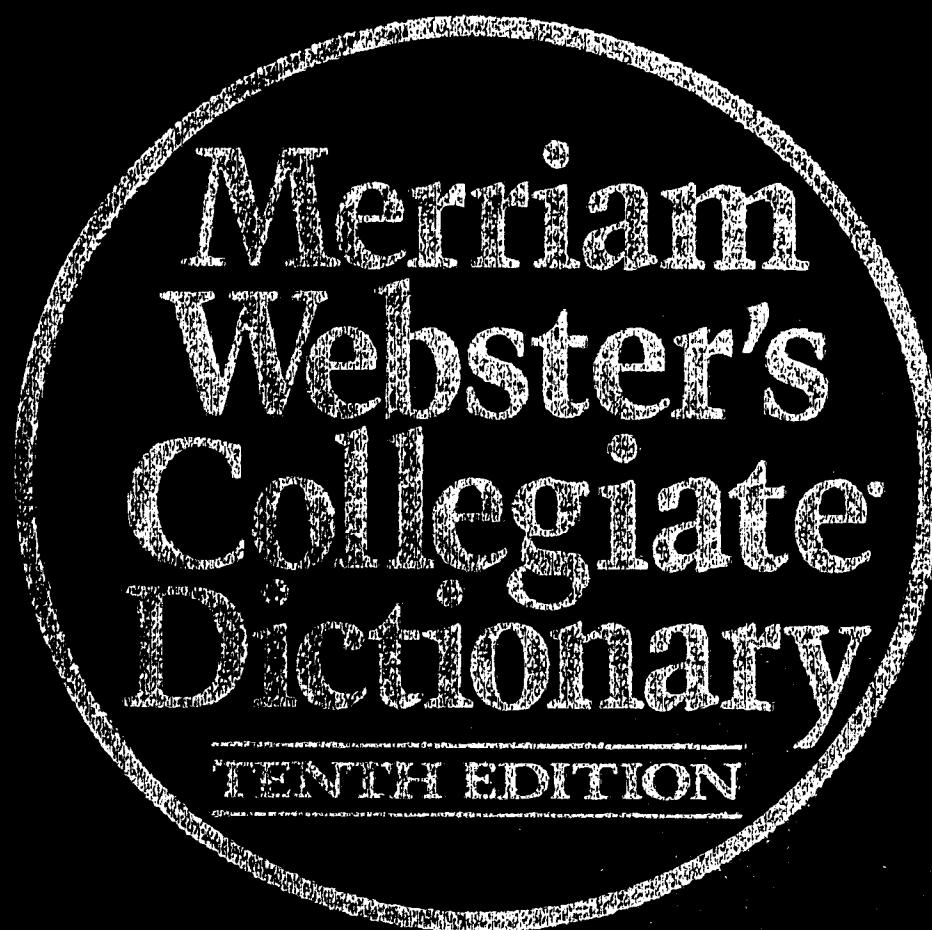
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EXHIBIT L-19(b)





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Library of Congress Cataloging in Publication Data

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Made in the United States of America

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con-sul-tan-cy \kən-'səl-tən(t)-sē\ n, pl -cies (1955) 1 : CONSULTATION 2 : an agency that provides consulting services 3 : the position of a consultant

con-sul-tant \kən-'səl-tənt\ n (1697) 1 : one who consults another 2 : one who gives professional advice or services : EXPERT — **con-sul-tant-ship** \,-shəp\ n

con-sul-ta-tion \kən(t)-səl-tə-shən\ n (15c) 1 : COUNCIL, CONFERENCE, specif : a deliberation between physicians on a case or its treatment 2 : the act of consulting or conferring

con-sul-ta-tive \kən-'səl-tə-tiv, "kən(t)-səl-tə-tiv\ adj (1583) : of, relating to, or intended for consultation : ADVISORY (as committee)

con-sult-ing \kən-'səl-tin\ adj (1801) 1 : providing professional or expert advice (as architect) 2 : of or relating to consultation or a consultant (as room of a psychiatrist)

con-sul-tive \kən-'səl-tiv\ adj (1616) : CONSULTATIVE

con-sul-tor \kən-'səl-tər\ n (1611) : one that consults or advises; esp : an adviser to a Roman Catholic bishop, provincial, or sacred congregation

con-sum-able \kən-'sü-mə-bəl\ adj (1641) : capable of being consumed

consumable n (1802) : something (as food or fuel) that is consumable — usu. used in pl.

con-sum-e \kən-'süm\ vb **con-sumed**; **con-sum-ing** [ME, fr. MF or L: MF consumer, fr. L consumere, fr. com- + sumere to take up, take, fr. sub- up + emere to take — more at SUB, REDEEM] vt (14c) 1 : to do away with completely : DESTROY (fire consumed several buildings) 2 a : to spend wastefully : SQUANDER b : USE UP (writing consumed much of his time) 3 : to eat or drink esp. in great quantity (consumed several kegs of beer) 4 : to engage fully : ENgross (consumed with curiosity) ~ vi 1 : to waste or burn away : PERISH 2 : to utilize economic goods

con-sum-ed-ly \'-sü-məd-lē\ adv (1707) : as if consumed : EXCESSIVELY

con-sum-er \kən-'sü-mər\ n, often attrib (15c) : one that consumes: as a : one that utilizes economic goods b : an organism requiring complex organic compounds for food which it obtains by preying on other organisms or by eating particles of organic matter — compare PRODUCER 4 — **con-sum-er-ship** \,-shəp\ n

consumer credit n (1927) : credit granted to an individual esp. to finance the purchase of consumer goods or to defray personal expenses

consumer goods n pl (1890) : goods that directly satisfy human wants

con-sum-er-ism \kən-'sü-mə-ri-zəm\ n (1944) 1 : the promotion of the consumer's interests 2 : the theory that an increasing consumption of goods is economically desirable; also : a preoccupation with and an inclination toward the buying of consumer goods — **con-sum-er-ist** \,-ist\ n — **con-sum-er-is-tic** \kən-'sü-mə-'nis-tik\ adj

consumer price index n (1948) : an index measuring the change in the cost of typical wage-earner purchases of goods and services expressed as a percentage of the cost of these same goods and services in some base period — called also *cost-of-living index*

con-sum-ing \kən-'sü-min\ adj (1920) : deeply felt : ARDENT (a ~ interest); also : ENgrossing

con-sum-mate \kān(t)-sə-māt, kən-'sə-mət\ adj [ME consummat fulfilled, fr. L consummatus, pp. of consummare to sum up, finish, fr. com- + summa sum] (1527) 1 : complete in every detail : PERFECT 2 : extremely skilled and accomplished (as liar) 3 : of the highest degree (as skill) (as cruelty) — **con-sum-mately** adv

con-sum-mate \kān(t)-sə-māt, kən-'sə-mət\ vb -mat-ed; -mat-ing vt (1530) 1 a : FINISH, COMPLETE (as a business deal) b : to make perfect c : ACHIEVE 2 : to make (marital union) complete by sexual intercourse (as a marriage) ~ vi : to become perfected — **con-sum-ma-tive**

\kān(t)-sə-mā-tiv, kən-'sə-mə-tiv\ adj — **con-sum-ma-tor** \kān(t)-sə-mā-tər\ n

con-sum-ma-tion \kān-sə-'mā-shən\ n (14c) 1 : the act of consummating (the ~ of a contract by mutual signature); specif : the consummating of a marriage 2 : the ultimate end : FINISH

con-sum-ma-to-ry \kān-'sə-mə-tōrē, -tōr\ adj (1648) 1 : of or relating to consummation : CONCLUDING 2 : of, relating to, or being a response or act (as eating or copulating) that terminates a period of usu. goal-directed behavior

con-sump-tion \kān-'səm(p)-shən\ n [ME consumpcion, fr. L consumptio, consumptio, fr. consumere] (14c) 1 a : a progressive wasting away of the body esp. from pulmonary tuberculosis b : TUBERCULOSIS 2 : the act or process of consuming 3 : the utilization of economic goods in the satisfaction of wants or in the process of production resulting chiefly in their destruction, deterioration, or transformation

con-sump-tive \'-səm(p)-tiv\ adj (1664) 1 : tending to consume 2 : of, relating to, or affected with consumption — **con-sump-tive-ly** adv

con-sump-tive n (1666) : a person affected with consumption

con-tac-t \kān-,takt\ n [F or L; F, fr. L contactus, fr. contigere to have contact with — more at CONTINGENT] (1626) 1 a : union or junction of surfaces b : the apparent touching or mutual tangency of the limbs of two celestial bodies or of the disk of one body with the shadow of another during an eclipse, transit, or occultation c : (1) : the junction of two electrical conductors through which a current passes (2) : a special part made for such a junction 2 a : ASSOCIATION, RELATIONSHIP b : CONNECTION, COMMUNICATION c : an establishing of communication with someone or an observing or receiving of a significant signal from a person or object (radar ~ with Mars) 3 : a person serving as a go-between, messenger, connection, or source of special information (business ~s) 4 : CONTACT LENS

con-tac-t \kān-,takt, kən-\ vi (1834) : to make contact ~ vt 1 : to bring into contact 2 a : to enter or be in contact with : JOIN b : to get in communication with (as your local dealer)

usage The use of *contact* as a verb, esp. in sense 2b, is accepted as standard by almost all commentators except those who write college handbooks.

con-tac-t \kān-,takt\ adj (1859) : maintaining, involving, or activated or caused by contact (as poisons) (as sports)

contact binary n (1952) : a binary star system in which the two stars are close enough together for material to pass between them

contact hitter n (1982) : a hitter in baseball who seldom strikes out

contact inhibition n (1965) : cessation of cellular undulating movements upon contact with other cells with accompanying cessation of cell growth and division

contact language n (1950) : PIDGIN

contact lens n (1888) : a thin lens designed to fit over the cornea and usu. worn to correct defects in vision

contact print n (1890) : a photographic print made with the negative in contact with the sensitized paper, plate, or film

con-ta-gion \kən-'tā-jən\ n [ME, fr. MF & L: MF contagion, contagio, fr. contigere to have contact with, pollute] (14c) 1 a : a contagious disease b : the transmission of a disease by direct or indirect contact c : a disease-producing agent (as a virus) 2 a : POISON b : contagious influence, quality, or nature c : corrupting influence or contact 3 a : rapid communication of an influence (as a doctrine or emotional state) b : an influence that spreads rapidly

con-ta-gious \,-jəs\ adj (14c) 1 : communicable by contact : CATCHING (as diseases) 2 : bearing contagion 3 : used for contagious diseases (as ward) 4 : exciting similar emotions or conduct in others (as enthusiasm) — **con-ta-gious-ly** adv — **con-ta-gious-ness** n

contagious abortion n (1910) : a contagious or infectious disease (as a brucellosis) of domestic animals characterized by abortion

con-ta-gium \kən-'tā-jē-üm\ n, pl -gia \,-jē-ə\ [L, contagion, fr. contigere] (1870) : a virus or living organism capable of causing a communicable disease

con-tain \kən-'tān\ vb [ME conteinen, fr. OF contenir, fr. L continere to hold together, hold in, contain, fr. com- + tenere to hold — more at THIN] vt (14c) 1 : to keep within limits: as a : RESTRAIN, CONTROL b : CHECK, HALT c : to follow successfully a policy of containment toward d : to prevent (as an enemy or opponent) from advancing or from making a successful attack 2 a : to have within : HOLD b : COMPRISE, INCLUDE 3 a : to be divisible by usu. without a remainder b : ENCLOSE, BOUND ~ vi : to restrain oneself — **con-tain-able** \,-ta-nə-bəl\ adj

syn **CONTAIN, HOLD, ACCOMMODATE** mean to have or be capable of having within. **CONTAIN** implies the actual presence of a specified substance or quantity within something (the can *contains* a quart of oil). **HOLD** implies the capacity of containing or the usual or permanent function of containing or keeping (the bookcase will *hold* all my textbooks). **ACCOMMODATE** stresses holding without crowding or inconvenience (the hall can *accommodate* 500 people).

contained adj (1653) : RESTRAINED; also : CALM

con-tain-er \kən-'tā-nər\ n (15c) : one that contains; esp : a receptacle (as a box or jar) for holding goods — **con-tain-er-less** \,-ləs\ adj

con-tain-er-board \,-bōrd, -bōrd\ n (ca. 1924) : corrugated or solid paperboard used for making containers

con-tain-er-i-sa-tion, **con-tain-er-ise** Brit var of **CONTAINERIZATION**, **CONTAINERIZE**

con-tain-er-i-za-tion \kən-'tā-nə-rā-'zā-shən\ n (1956) : a shipping method in which a large amount of material (as merchandise) is packaged into large standardized containers

con-tain-er-ize \kən-'tā-nə-rīz\ vt -ized; -iz-ing (1956) 1 : to ship by containerization 2 : to pack in containers

con-tain-er-port \,-nor, -pōrt, -pōrl\ n (1970) : a shipping port specially equipped to handle containerized cargo

con-tain-er-ship \,-nor, -ship\ n (1966) : a ship specially designed or equipped for carrying containerized cargo

con-tain-ment \kən-'tān-mənt\ n (1655) 1 : the act, process, or means of containing 2 : the policy, process, or result of preventing the expansion of a hostile power or ideology

con-tam-i-nant \kən-'ta-mə-nənt\ n (1922) : something that contaminates

con-tam-i-nate \kən-'ta-mə-nāt\ vt -nat-ed; -nat-ing [ME, fr. L contaminatus, pp. of contaminare; akin to L contagio contagion] (15c) 1 a : to soil, stain, corrupt, or infect by contact or association (bacteria contaminated the wound) b : to make inferior or impure by admixture (iron contaminated with phosphorus) 2 : to make unfit for use by the introduction of unwholesome or undesirable elements — **con-tam-i-na-tive** \,-nā-tiv\ adj — **con-tam-i-na-tor** \,-nā-tər\ n

syn **CONTAMINATE, TAINT, POLLUTE, DEFILE** mean to make impure or unclean. **CONTAMINATE** implies intrusion of or contact with dirt or foulness from an outside source (water *contaminated* by industrial wastes). **TAINT** stresses the loss of purity or cleanliness that follows contamination (*tainted* meat) (a politician's *tainted* reputation). **POLLUTE**, sometimes interchangeable with *contaminate*, distinctively may imply that the process which begins with contamination is complete and that what was pure or clean has been made foul, poisoned, or filthy (the *polluted* waters of the river). **DEFILE** implies befouling of what could or should have been kept clean and pure or held sacred and commonly suggests violation or desecration (*defile* a hero's memory with slanderous innuendo).

con-tam-i-na-tion \kən-'ta-mə-nā-shən\ n (15c) 1 : a process of contaminating : a state of being contaminated 2 : CONTAMINANT

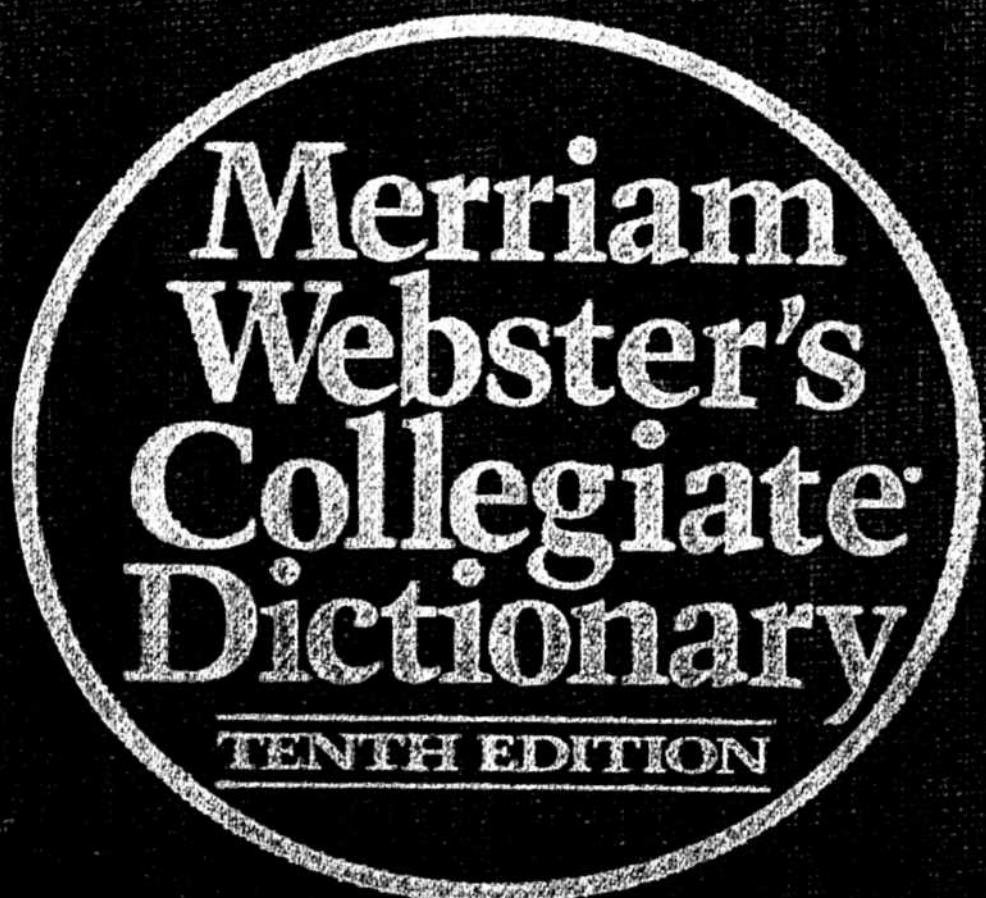
conte \kōr(n)\ n [F] (1891) : a usu. short tale of adventure

con-tem-n \kən-'tem-n\ vt [ME contempn, fr. MF contempn, fr. L contemnere, fr. com- + temnere to despise] (15c) : to view or treat with contempt : SCORN **syn** see DESPISE — **con-tem-ner** also **con-tem-nor** \,-tem-nər, -te-mər\ n

con-tem-plate \kān-təm-,plāt, -tem-\ vb -plat-ed; -plat-ing [L contemplatus, pp. of contemplari, fr. com- + templum space marked out for observation of auguries — more at TEMPLE] vt (1537) 1 : to view or consider with continued attention : meditate on 2 : to view as contingent or probable or as an end or intention ~ vi : PONDER, MEDITATE **syn** see CONSIDER — **con-tem-pla-tor** \,-plā-tər\ n

con-tem-pla-tion \kān-təm-,plā-shən, -tem-\ n (13c) 1 a : concentration on spiritual things as a form of private devotion b : a state of mystical awareness of God's being 2 : an act of considering with

EXHIBIT L-19(c)





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TENTH EDITION

Merriam-Webster, Incorporated
Springfield, Massachusetts, U.S.A.



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Library of Congress Cataloging in Publication Data
Main entry under title:

Merriam-Webster's collegiate dictionary. — 10th ed.

p. cm.

ISBN 0-87779-708-0 (unindexed). — ISBN 0-87779-709-9 (indexed).
— ISBN 0-87779-710-2 (deluxe). — ISBN 0-87779-707-2 (laminated cover).
1. English language—Dictionaries.

PE1628.M36 1994
423—dc20

93-32603
CIP

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816 **opportunist • optimum**

tice of taking advantage of opportunities or circumstances often with little regard for principles or consequences — **op·por·tu·nist** \-tü-nist, \-tyü-\ n or adj

op·por·tu·nis·tic \-tü-\nis-tik, \-tyü-\ adj (1892) : taking advantage of opportunities as they arise: as a : exploiting opportunities with little regard to principle or consequences (a politician considered ~) b : feeding on whatever food is available (the ~ feeders) c : being or caused by a usu. harmless microorganism that can become pathogenic when the host's resistance is impaired (the ~ infections) — **op·por·tu·nis·ti·cally** \-tik(\-a-)lē\ adv

op·por·tu·ni·ty \-a-pör-\tü-nä-tē, \-tyü-\ n, pl -ties (14c) 1 : a favorable juncture of circumstances (the halt provided an ~ for rest and refreshment) 2 : a good chance for advancement or progress

opportunity cost n (1911) : the cost of making an investment that is the difference between the return on one investment and the return on an alternative

op·pos·able \-pō-zä-bəl\ adj (1667) 1 : capable of being opposed or resisted 2 : capable of being placed against one or more of the remaining digits of a hand or foot (the ~ human thumb) — **op·pos·abil·i·ty** \-pō-zä-\bi-lä-tē\ n

op·pose \-pōz\ vt **op·posed**; **op·pos·ing** [F *opposer*, fr. L *opponere* (perf. indic. *opposui*), fr. *ob-* against + *ponere* to place — more at *OB*, POSITION] (1579) 1 : to place opposite or against something 2 : to place over against something so as to provide resistance, counterbalance, or contrast 3 : to offer resistance to — **op·pos·er** n

syn OPPOSE, COMBAT, RESIST, WITHSTAND mean to set oneself against someone or something. OPPOSE can apply to any conflict, from mere objection to bitter hostility or warfare (opposed the plan). COMBAT stresses the forceful or urgent countering of something (combat disease). RESIST implies an overt recognition of a hostile or threatening force and a positive effort to counteract or repel it (resisting temptation). WITHSTAND suggests a more passive resistance (trying to withstand peer pressure).

op·posed \-pōzd\ adj (1596) : set or placed in opposition: CONTRARY (with politicians, as ~ to soap, you cannot return what you have bought) — Felix G. Rohatyn

op·pose·less \-pōz-lēs\ adj (1605) *archaic* : IRRESISTIBLE

op·po·site \-ä-pō-zät, \-ä-pō-sät\ adj [ME, fr. MF, fr. L *oppositus*, pp. of *opponere*] (14c) 1 a : set over against something that is at the other end or side of an intervening line or space (the ~ interior angles) (the ~ ends of a diameter) b : situated in pairs on an axis with each member being separated from the other by half the circumference of the axis (the ~ leaves) — compare ALTERNATE 2 a : occupying an opposing and often antagonistic position (the ~ sides of the question) b : diametrically different (as in nature or character) (the ~ meanings) 3 : contrary to one another or to a thing specified: REVERSE (gave them the ~ directions) 4 : being the other of a pair that are corresponding or complementary in position, function, or nature (members of the ~ sex) 5 : of, relating to, or being the side of a baseball field that is near the first base line for a right-handed batter and near the third base line for a left-handed batter — **op·po·site·ly** adv — **op·po·site·ness** n

syn OPPOSITE, CONTRADICTORY, CONTRARY, ANTITHETICAL mean being so far apart as to be or seem irreconcilable. OPPOSITE applies to things in sharp contrast or in conflict (opposite views on foreign aid). CONTRADICTORY applies to two things that completely negate each other so that if one is true or valid the other must be untrue or invalid (made contradictory predictions about whether the market would rise or fall). CONTRARY implies extreme divergence or diametrical opposition (contrary assessments of the war situation). ANTITHETICAL stresses clear and unequivocal diametrical opposition (a law that is antithetical to the very idea of democracy).

op·po·site n (15c) 1 : something that is opposed to some other often specified thing 2 : ANTONYM 3 : ADDITIVE INVERSE esp : the additive inverse of a real number

op·po·site adv (1667) : on or to an opposite side

op·po·site prep (1758) 1 : across from and usu. facing or on the same level with (sat ~ each other) 2 : in a role complementary to (played ~ the leading man in the comedy)

op·po·site **num·ber** n (1906) : a member of a system or class who holds relatively the same position as a particular member in a corresponding system or class: COUNTERPART

op·po·si·tion \-ä-pä-\zi-shän\ n (14c) 1 : a configuration in which one celestial body is opposite another in the sky or in which the elongation is near or equal to 180 degrees 2 : the relation between two propositions having the same subject and predicate but differing in quantity or quality or both 3 : an act of setting opposite or over against: the condition of being so set 4 : hostile or contrary action or condition 5 a : something that opposes; *specif*: a body of persons opposing something b *often cap* : a political party opposing and prepared to replace the party in power — **op·po·si·tional** \-zish-näl, \-zi-shä-näl\ adj

op·po·si·tion·ist \-zish-nist\ n (1773) : a member of an opposition — **oppositionist** adj

op·press \-pres\ vt [ME, fr. MF *oppresser*, fr. L *opprimere*, fr. *ob-* against + *premere* to press — more at *OB*, PRESS] (14c) 1 a *archaic* : SUPPRESS b : to crush or burden by abuse of power or authority 2 : to burden spiritually or mentally : weigh heavily upon

syn see WRONG — **op·pres·sor** \-pre-sör\ n

op·pres·sion \-pre-shän\ n (14c) 1 a : unjust or cruel exercise of authority or power b : something that oppresses esp. in being an unjust or excessive exercise of power 2 : a sense of being weighed down in body or mind: DEPRESSION

op·pres·sive \-pre-siv\ adj (ca. 1677) 1 : unreasonably burdensome or severe (as legislation) 2 : TYRANNICAL 3 : overwhelming or depressing to the spirit or senses (an ~ climate) — **syn** see ONEROUS — **op·pres·sive·ly** adv — **op·pres·sive·ness** n

op·pro·bri·ous \-prō-brē-əs\ adj (14c) 1 : expressive of opprobrium : SCURVILOUS (as language) 2 : deserving of opprobrium : INFAMOUS — **op·pro·bri·ous·ly** adv — **op·pro·bri·ous·ness** n

op·pro·bri·um \-brē-əm\ n [L, fr. *opprobrire* to reproach, fr. *ob* in the way of + *probrare* reproach; akin to L *pro* forward and to L *ferre* to carry, bring — more at *OB*, FOR, BEAR] (1656) 1 : something that brings disgrace 2 a : public disgrace or ill fame that follows from conduct considered grossly wrong or vicious b : CONTEMPT, REPROACH

op·pugn \-pyün, ä-\ vt [ME, fr. L *oppugnare*, fr. *ob-* against + *pugnare* to fight — more at *OB*, PUNGENT] (15c) 1 : to fight against 2 : to call in question — **op·pugn·er** n

Ops \äps\ n [L] : the Roman goddess of abundance and the wife of Saturn

op·sin \äp-sən\ n [prob. fr. *rhodopsin*] (1951) : any of various colorless proteins that in combination with retinal or a related prosthetic group form a visual pigment (as rhodopsin) in a reaction which is reversed by light

opsis n *comb form*, pl **-opses** or **-opsides** [NL, fr. Gk. *opsis* appearance, vision] : structure resembling a (specified) thing (caryopsis)

op·son·ic \äp-sə-nik\ adj (1903) : of, relating to, or involving opsonin

op·so·nin \äp-sə-nən\ n [L *opsoneare* to buy provisions, cater (fr. Gk. *opsōein*) + E *-in* — more at OLIGOPSONY] (1903) : an antibody of blood serum that makes foreign cells more susceptible to the action of the phagocytes

-opsy n *comb form* [Gk. *-opsia*, fr. *opsis*] : examination (necropsy)

opt \äpt\ vi [F *opter*, fr. L *optare*] (1877) : to make a choice; esp : to decide in favor of something (~ed for a tax increase — Tom Wicker)

op·ta·tive \äp-tä-tiv\ adj (15c) 1 a : of, relating to, or constituting a verbal mood that is expressive of wish or desire b : of, relating to, or constituting a sentence that is expressive of wish or hope 2 : expressing desire or wish — **op·ta·tive·ly** adv

op·tic \äp-tik\ adj [ME, fr. MF *optique*, fr. L *opticus*, fr. Gk. *optikos*, fr. *opsesthia* to be going to see; akin to Gk *opsis* appearance, *öps* eye — more at EYE] (14c) : of or relating to vision or the eye

optic n (1600) 1 : EYE 2 a : any of the elements (as lenses, mirrors, or light guides) of an optical instrument or system — usu. used in pl. b : an optical instrument

op·ti·cal \äp-ti-kəl\ adj (1570) 1 : of or relating to the science of optics 2 : of or relating to vision: VISUAL b : VISIBLÉ 1 (~ wavelength) c : of, relating to, or being objects that emit light in the visible range of frequencies (an ~ galaxy) d : using the properties of light to aid vision (an ~ instrument) 3 a : of, relating to, or utilizing light esp. instead of other forms of energy (~ microscopy) b : involving the use of light-sensitive devices to acquire information for a computer (~ character recognition) 4 : of or relating to optical art — **op·ti·cal·ly** \-kəlē\ adv

optical activity n (1877) : ability of a chemical substance to rotate the plane of vibration of polarized light to the right or left

optical art n (1964) : nonobjective art characterized by the use of straight or curved lines or geometric patterns often for an illusory effect (as of motion)

optical bench n (1883) : an apparatus that is fitted for the convenient location and adjustment of light sources and optical devices and that is used for the observation and measurement of optical phenomena

optical disk n (1980) : a disk with a plastic coating on which information (as music or visual images) is recorded digitally (as in the form of tiny pits) and which is read by using a laser

optical fiber n (1962) : a single fiber-optic strand

optical glass n (1840) : flint or crown glass of well-defined characteristics used esp. for making lenses

optical illusion n (1794) : ILLUSION 2a(1)

optically active adj (1885) : capable of rotating the plane of polarization of light to the right or left — used of compounds, molecules, or atoms

optical rotation n (1895) : the angle through which the plane of vibration of polarized light that traverses an optically active substance is rotated

optic axis n (1664) : a line in a doubly refracting medium that is parallel to the direction in which all components of plane-polarized light travel with the same speed

optic chiasma n (1872) : the X-shaped partial decussation on the undersurface of the hypothalamus through which the optic nerves are continuous with the brain — called also *optic chiasm*

optic cup n (ca. 1885) : the optic vesicle after invaginating to form a 2-layered cup from which the retina and pigmented layer of the eye will develop — called also *eyecup*

optic disk n (ca. 1890) : BLIND SPOT 1a

op·ti·cian \äp-ti-shän\ n (1687) 1 : a maker of or dealer in optical items and instruments 2 : a person who reads prescriptions for visual correction, orders lenses, and dispenses spectacles and contact lenses — compare OPHTHALMOLOGIST, OPTOMETRIST

optic lobe n (1854) : either of two prominences of the midbrain concerned with vision

optic nerve n (1615) : either of the pair of nerves that comprise the 2d pair of cranial nerves, arise from the ventral part of the diencephalon, supply the retina, and conduct visual stimuli to the brain — see EYE illustration

op·tics \äp-tiks\ n pl but sing in constr (1579) : a science that deals with the genesis and propagation of light, the changes that it undergoes and produces, and other phenomena closely associated with it

optic vesicle n (ca. 1885) : an evagination of each lateral wall of the embryonic vertebrate forebrain from which the nervous structures of the eye develop

op·ti·mal \äp-tä-mäl\ adj (1890) : most desirable or satisfactory: OPTIMUM — **op·ti·mal·i·ty** \äp-tä-mäl-ətē\ n — **op·ti·mal·ly** \-mäl-ēl\ adv

op·ti·mi·sa·tion, op·ti·mize *Brit var of OPTIMIZATION, OPTIMIZE*

op·ti·mism \äp-tä-mizm\ n [F *optimisme*, fr. L *optimum*, n., best, fr. neut. of *optimus* best; akin to L *opus* power — more at OPULENCE] (1759)

1 : a doctrine that this world is the best possible world 2 : an inclination to put the most favorable construction upon actions and events or to anticipate the best possible outcome — **op·ti·mist** \-mיסט\ n — **op·ti·mis·tic** \äp-tä-mis-tik\ adj — **op·ti·mis·ti·cal·ly** \-tik(\-a-)lē\ adv

Op·ti·mist \äp-tä-mist\ n [Optimist (Club)] (1911) : a member of a major international service club

op·ti·mi·za·tion \äp-tä-mä-\zä-shän\ n (1857) : an act, process, or methodology of making something (as a design, system, or decision) as fully perfect, functional, or effective as possible; *specif*: the mathematical procedures (as finding the maximum of a function) involved in this

op·ti·mize \äp-tä-miz\ vt -mized; -miz·ing (1857) : to make as perfect, effective, or functional as possible — **op·ti·miz·er** \äp-mi-zər\ n

op·ti·mum \äp-tä-məm\ n, pl -ma \-mə\ also -mums [L] (1879) 1

EXHIBIT L-20

Ex. L-20
CMO US PATENT NO. 6,689,629

INDEX OF DISPUTED TERMS

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dummy patterns comprising at least about 30% of the area of the insulating substrate, the dummy conductive patterns situated between the connection pads and the pixel electrodes	6
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EXHIBIT L-20
U.S. PATENT NO. 6,689,629
TERMS IN DISPUTE

ASSERTED CLAIM 1**LGD's Claim Construction**

1. An array substrate for display, comprising:
 a layer of an insulating substrate, having an area;
 a thin film transistor array formed on the insulating substrate;
 a plurality of wiring arranged on the insulating substrate, each wiring having a first end, the wiring in communication with at least one of the transistors in the thin film array;
 connection pads, each connection pad contacting the first end of at most one of the plurality of wirings;
 pixel electrodes, and
 dummy conductive patterns, the dummy patterns comprising at least about 30% of the area of the insulating substrate, the dummy conductive patterns situated between the connection pads and the pixel electrodes such that the dummy patterns are not in contact with any of the wiring.

a layer of an insulating substrate, having an area¹ – material deposited and patterned on a substrate, such as glass, that covers part of the array substrate

pixel electrode² – patterns of transparent electrically conductive material that stores charge to drive the liquid crystal material within an individual element of the liquid crystal display device

¹ Disputed Term “a layer of an insulating substrate, having an area” also appears in asserted claim 9 in the same context.

² Disputed Term “pixel electrode” also appears in asserted claim 9 in the same context.

INTRINSIC EVIDENCE FOR DISPUTED TERM “A LAYER OF AN INSULATING SUBSTRATE, HAVING AN AREA”:

However, though this method enables evenness of etching at the ends of the thin film transistor array substrate to be improved, the method cannot effectively prevent the undercut of the signal lines in a region where the wiring density is apt to be lowered from ends of the pixel electrodes to the connection pads, for example, in a portion where drawing wiring is formed.

1:61-67

passivity of the upper conductive material 4. In such a case, the upper conductive material 4 is passivated not to be dissolved by the etchant, and only the lower conductive material 3 is dissolved accompanied with the progress of the etching, resulting in the occurrence of the undercut. When such undercut occurs, the wiring, for example, the gate wiring cannot be sufficiently coated with an insulating film in some cases, thus causing inconvenience such as an interlayer short circuit, resulting in lowering a yield of the display device.

2:54-63

including: a plurality of wirings arranged on an insulating substrate; and connection pads arranged on unilateral ends of the wirings and respectively connected with the wirings; forming pixel electrodes; and forming dummy conductive patterns between ends of the connection pads and ends of the pixel electrodes. In the present invention, it is preferable that the dummy conductive patterns be formed so as to occupy 30 area % or more. In the present invention, the dummy conductive patterns can be formed as any of land patterns and line-and-space patterns. In the present invention, the

3:33-43

The present invention makes it possible to prevent undercut of the lower conductive material 3, which occurs due to passivity of the upper conductive material 4. In the present invention, the term “passivity” is referred to as a phenomenon that metal such as molybdenum or a metal alloy such as a molybdenum alloy becomes insoluble in an acid or

5:11-16

INTRINSIC EVIDENCE FOR DISPUTED TERM “A LAYER OF AN INSULATING SUBSTRATE, HAVING AN AREA”
(cont’d):

between the pixel electrodes 22 and each signal line connection pad 27. Thus, the wiring density is increased. Therefore, it is made possible to form good wiring over the entire surface of the array substrate for display without causing defects such as undercut and a mouse hole of the lower conductive material 3 during etching for the scan lines 23 and the signal lines 24. Each of these dummy conductive patterns 29 can be formed as a two-layers structure with the same materials as those of the scan lines 23 and the signal lines 24 at the same time when the patterning is performed therefor.

5:32-42

Subsequently, etching is performed by use of an etchant such as a solution of phosphoric acid, nitric acid, acetic acid and mixtures thereof, thus forming the wiring 2 and the dummy conductive patterns 29. The dummy conductive patterns 29 are arranged in the portions where the wiring density is low. Thus, it is made possible to form wirings having good tapered shape as shown in FIG. 5C even in regions where the conductive material such as molybdenum tends to be passivated. A taper angle can be set in a range of 20 degrees to 70 degrees by adjusting a composition of the etchant and etching conditions. It is more preferable to set

6:34-44

The film thickness of molybdenum is about 50 nm, and wet etching is performed by use of an etchant of a mixed solution of phosphoric acid, nitric acid and acetic acid. As shown in FIG. 6, a good tapered shape is formed even in a wiring portion where the undercut is formerly apt to occur by forming the dummy conductive pattern 29.

6:62-67

INTRINSIC EVIDENCE FOR DISPUTED TERM “A LAYER OF AN INSULATING SUBSTRATE, HAVING AN AREA”
(cont’d):

FIG. 7 is a photograph showing a shape of the wiring 34 shown in FIG. 4, which was obtained when the dummy conductive pattern 29 shown in FIG. 4 was formed and the etching was performed under the same conditions as those in FIG. 6. As shown in FIG. 7, even when the density of the dummy conductive pattern 29 is increased, a good tapered shape is obtained.

7:1-7

As described above, according to the present invention, it is made possible to provide an array substrate for display, a method of manufacturing an array substrate for display and a display device using the array substrate for display, which are capable of being etched at a sufficiently high etching rate and a sufficient selection ratio, and eliminating the under cut and the lowering of a yield in manufacturing due to the inconvenience such as an interlayer short circuit. Moreover, according to the present invention, it is made possible to provide an array substrate for display, a method of manufacturing an array substrate for display and a display device using the array substrate for display, which are capable of providing a large-sized and high-resolution display device.

7:49-59

INTRINSIC EVIDENCE FOR DISPUTED TERM “PIXEL ELECTRODE”:

is shown in FIG. 1. In the array substrate **10** for display of the present invention, a plurality of thin film transistors **21** constitute an array. A pixel electrode **22** is connected with each thin film transistor **21** that controls a potential of the pixel electrode. In the array substrate **10** for display shown in FIG. 2, what is further shown is that a scan line **23** and a signal line **24** are connected with each thin film transistor **21**.

4:45-51

EXHIBIT K
U.S. PATENT NO. 6,689,629
TERMS IN DISPUTE

ASSERTED CLAIM 1

What is claimed is:

1. An array substrate for display, comprising:
 a layer of an insulating substrate, having an area;
 a thin film transistor array formed on the insulating substrate;
 a plurality of wiring arranged on the insulating substrate, each wiring having a first end, the wiring in communication with at least one of the transistors in the thin film array;
 connection pads, each connection pad contacting the first end of at most one of the plurality of wirings;
 pixel electrodes, and
 dummy conductive patterns, the dummy patterns comprising at least about 30% of the area of the insulating substrate, the dummy conductive patterns situated between the connection pads and the pixel electrodes such that the dummy patterns are not in contact with any of the wiring.

LGD's Claim Construction

a plurality of wiring arranged on the insulating substrate –
 portions of the layer that convey voltages or signals from the connection pads to the thin-film transistors in the pixel array

dummy conductive patterns¹ –
 portions of the layer that do not receive or convey voltages or signals

dummy patterns comprising at least about 30% of the area of the insulating substrate, the dummy conductive patterns situated between the connection pads and the pixel electrodes –
 approximately 30% or more of the area of the layer is made of dummy conductive patterns that are located between the connection pads and an outer edge of the pixel electrodes in the pixel array

¹ Disputed Term “dummy conductive patterns” also appears in asserted claim 9 in the same context.

INTRINSIC EVIDENCE FOR DISPUTED TERM “A
PLURALITY OF WIRING ARRANGED ON THE INSULATING
SUBSTRATE”:

constitute an array. A pixel electrode 22 is connected with each thin film transistor 21 that controls a potential of the pixel electrode. In the array substrate 10 for display shown in FIG. 2, what is further shown is that a scan line 23 and a signal line 24 are connected with each thin film transistor 21.

The respective scan lines 23 are connected with a driver 26 through scan line connection pads 25, and the respective signal lines 24 are connected with a driver 28 through signal line connection pads 27. These scan lines 23 and the signal lines 24 are formed so as to have the same constitution. As

4:47-56

Therefore, it is made possible to form good wiring over the entire surface of the array substrate for display without causing defects such as undercut and a mouse hole of the lower conductive material 3 during etching for the scan lines 23 and the signal lines 24. Each of these dummy conductive patterns 29 can be formed as a two-layers structure with the same materials as those of the scan lines 23 and the signal lines 24 at the same time when the patterning is performed therefor.

5:34-42

Subsequently, etching is performed by use of an etchant such as a solution of phosphoric acid, nitric acid, acetic acid and mixtures thereof, thus forming the wiring 2 and the dummy conductive patterns 29. The dummy conductive patterns 29 are arranged in the portions where the wiring density is low. Thus, it is made possible to form wirings

6:35-40

INTRINSIC EVIDENCE FOR DISPUTED TERM “DUMMY CONDUCTIVE PATTERNS”:

Therefore, it is made possible to form good wiring over the entire surface of the array substrate for display without causing defects such as undercut and a mouse hole of the lower conductive material 3 during etching for the scan lines 23 and the signal lines 24. Each of these dummy conductive patterns 29 can be formed as a two-layers structure with the same materials as those of the scan lines 23 and the signal lines 24 at the same time when the patterning is performed therefor.

5:34-42

Subsequently, etching is performed by use of an etchant such as a solution of phosphoric acid, nitric acid, acetic acid and mixtures thereof, thus forming the wiring 2 and the dummy conductive patterns 29. The dummy conductive patterns 29 are arranged in the portions where the wiring density is low. Thus, it is made possible to form wirings

6:35-40

Thereafter, in the present invention, gate insulating films, the gate electrodes, the source electrodes, the drain electrodes, the pixel electrodes and the like are formed, thus the array substrate 10 for display of the present invention is manufactured. In the present invention, the dummy conductive patterns 29 may be removed if necessary. Alternatively, the dummy conductive patterns 29 may be left as they are without being eliminated.

6:48-55

INTRINSIC EVIDENCE FOR DISPUTED TERM “DUMMY PATTERNS COMPRISING AT LEAST ABOUT 30% OF THE AREA OF THE INSULATING SUBSTRATE, THE DUMMY CONDUCTIVE PATTERNS SITUATED BETWEEN THE CONNECTION PADS AND THE PIXEL ELECTRODES”:

However, though this method enables evenness of etching at the ends of the thin film transistor array substrate to be improved, the method cannot effectively prevent the undercut of the signal lines in a region where the wiring density is apt to be lowered from ends of the pixel electrodes to the connection pads, for example, in a portion where drawing wiring is formed.

1:61-67

pads arranged on unilateral ends of the wirings and respectively connected with the wirings; pixel electrodes, and dummy conductive patterns arranged between the ends of the connection pads and ends of the pixel electrodes. The dummy conductive patterns can occupy 30 area % or more. In the present invention, the dummy conductive patterns can be formed as any of land patterns and line-and-space patterns. In the present invention, the wirings are constituted of

3:16-23

substrate; and connection pads arranged on unilateral ends of the wirings and respectively connected with the wirings; forming pixel electrodes; and forming dummy conductive patterns between ends of the connection pads and ends of the pixel electrodes. In the present invention, it is preferable that the dummy conductive patterns be formed so as to occupy 30 area % or more. In the present invention, the dummy conductive patterns can be formed as any of land patterns and line-and-space patterns. In the present invention, the

3:34-43

Furthermore, in the embodiment shown in FIG. 2, dummy conductive patterns 29 are disposed between the pixel electrodes 22 and each scan line connection pad 25 and between the pixel electrodes 22 and each signal line connection pad 27. Thus, the wiring density is increased. Therefore, it is made possible to form good wiring over the entire surface of the array substrate for display without causing defects such as undercut and a mouse hole of the lower conductive material 3 during etching for the scan lines 23 and the signal lines 24. Each of these dummy conductive patterns 29 can be formed as a two-layers structure with the same materials as those of the scan lines 23 and the signal lines 24 at the same time when the patterning is performed therefor.

5:29-42

INTRINSIC EVIDENCE FOR DISPUTED TERM “DUMMY PATTERNS COMPRISING AT LEAST ABOUT 30% OF THE AREA OF THE INSULATING SUBSTRATE, THE DUMMY CONDUCTIVE PATTERNS SITUATED BETWEEN THE CONNECTION PADS AND THE PIXEL ELECTRODES”

(cont'd):

In any case of the patterns, in the present invention, it is preferable that the wiring density of the dummy conductive patterns 29 themselves be 30% or more on an area of a specified surface from a viewpoint of forming a properly tapered shape on the lower conductive material 3 without forming the undercut thereto while dissolving the upper conductive material 4 at a required rate.

5:55-61

Moreover, when the dummy conductive patterns 29 are arranged in the present invention, it is more preferable that the dummy conductive patterns 29 be formed between the end 30 of the pixel electrode 22 and each connection pads 25 and 27 so that the wiring density including the dummy conductive patterns 29 can be 30% or more on the area of a specified surface. In the present invention, the term “wiring density” refers to an area ratio of an area of portions where the signal lines, the scan lines, the drawing lines, and the

5:62-67 –
6:1-3

FIG. 4 is a view showing another embodiment of the dummy conductive pattern 29 of the present invention. In the embodiment shown in FIG. 4, the dummy conductive pattern 29 is disposed so that the wiring density thereof, which is specified at 30% or more, is further increased, thus reducing concentration of electric current to exposed portions of the upper conductive material to the etchant during the etching. As shown in FIG. 4, the dummy conductive pattern 29 may have any shapes and any patterns. Moreover,

6:7-15

such as a solution of phosphoric acid, nitric acid, acetic acid and mixtures thereof, thus forming the wiring 2 and the dummy conductive patterns 29. The dummy conductive patterns 29 are arranged in the portions where the wiring density is low. Thus, it is made possible to form wirings having good tapered shape as shown in FIG. 5C even in regions where the conductive material such as molybdenum tends to be passivated. A taper angle can be set in a range of 20 degrees to 70 degrees by adjusting a composition of the etchant and etching conditions. It is more preferable to set

6:35-44

INTRINSIC EVIDENCE FOR DISPUTED TERM “DUMMY PATTERNS COMPRISING AT LEAST ABOUT 30% OF THE AREA OF THE INSULATING SUBSTRATE, THE DUMMY CONDUCTIVE PATTERNS SITUATED BETWEEN THE CONNECTION PADS AND THE PIXEL ELECTRODES”

(cont'd):

FIG. 7 is a photograph showing a shape of the wiring 34 shown in FIG. 4, which was obtained when the dummy conductive pattern 29 shown in FIG. 4 was formed and the etching was performed under the same conditions as those in FIG. 6. As shown in FIG. 7, even when the density of the dummy conductive pattern 29 is increased, a good tapered shape is obtained.

7:1-7

method of manufacturing an array substrate for display and a display device using the array substrate for display, which are capable of being etched at a sufficiently high etching rate and a sufficient selection ratio, and eliminating the under cut and the lowering of a yield in manufacturing due to the inconvenience such as an interlayer short circuit. Moreover, according to the present invention, it is made possible to

7:51-57